



A review of the genera of Neotropical Encyrtidae (Hymenoptera: Chalcidoidea)

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Synopsis

Keys are presented to both sexes of the 148 genera* of Encyrtidae known from the Neotropical region. Notes on each genus are also included; these give information on known world distribution, number of species known, distribution of the genus within the Neotropics, a list of species known from the region, notes on biology, systematic placement and references to original descriptions, redescrptions, revisions or other useful papers. Lectotypes are designated for six species, 19 new genera and 18 new species are described, 16 new generic synonymies and 1 new specific synonymy are proposed.

Introduction

The Neotropical Encyrtidae, probably more diverse than those of any other part of the world (except perhaps Australasia), have been little studied beyond the work of De Santis (1964) and remain poorly known. So far 148 genera* and 380 species are recognized as occurring in the region covered by the present study, i.e. South and Central America, including associated islands and the whole of Mexico, the Antilles from Trinidad to Cuba, and Bermuda; it is very likely that this is only a small proportion of the number that actually occur there. Over 20 000 specimens comprising well over 500 species have been examined in the course of this study; many of these species are undescribed and belong to unknown genera. Nineteen genera are here described as new and as many as twice this number are ignored because of the condition of the material or because they are represented by single specimens. It is possible that a number of the genera considered here as valid may eventually fall in synonymy when more is known about the family as a whole. Some may have already been described by Girault from Australia, since there is a close similarity between the eastern Australian and Neotropical encyrtid faunas, but this

possibility has had to be ignored because of the general unavailability of the Girault type-material. In this review a species has been placed in an already described genus whenever possible, even though it may be considered somewhat out of place there.

An examination of collections received after the first draft of the keys was completed has shown that about a third of the material belonged to genera not included (described or undescribed), or to aberrant species that did not key out as expected (e.g. a *Zeteticontus* sp. with punctate sculpture on the scutellum or a *Metaphycus* sp. with a long exserted ovipositor). It would therefore seem unlikely that anyone using the keys could expect better than a 60 per cent success rate, even if the keys are used correctly. The keys are almost entirely 'artificial' and identifications should be confirmed by reference to original or subsequent generic descriptions. Some of the characters used to separate groups of genera, e.g. relative width of scape or length of funicle segments, may prove to be rather weak, but in such cases the genera concerned have usually been keyed out via both alternatives. More 'natural' keys would be very difficult to use and might be no more reliable than the present ones, since the number of genera and species remaining to be discovered in the Neotropics must be very high, probably at least twenty times greater than the number known at present. The keys are best regarded as an introductory guide to the Neotropical Encyrtidae and will be in constant need of revision as more information and material become available.

The main difficulty in producing a more 'natural' key to encyrtid genera is that, unlike most other chalcidoid families, the Encyrtidae do not easily break down into distinct subgroups. Most past authors have divided the family into three subfamilies: Arrhenophaginae, Antheminae and Encyrtinae, the last-mentioned one containing almost all the known genera. Trjapitzin (1973a; 1973b) divides the family into two large subfamilies only: Tetracneminae and Encyrtinae, separated mainly on the presence or absence of paratergites. This character may not be a reflection of natural grouping within the Encyrtidae since the genera with paratergites are almost all parasites of Pseudococcidae and these structures may have been evolved more than once as an adaptation to this form of parasitism; however, some genera of Encyrtinae, lacking paratergites, are also parasites of Pseudococcidae. Trjapitzin's study is nevertheless the most detailed to date and I have therefore attempted in this review to place all the included Neotropical genera according to his classification. This is often difficult or impossible because many of the tribes and subtribes are not clearly defined; some are even defined entirely by their biology, so that it is virtually impossible to assign to them genera of which the biology is unknown.

Included in the notes for each genus is the number of known world species and a list of those known from the Neotropics. References are given to original descriptions or redescrptions for most of the species listed, or to revisions or other works where these can be found. Also given are notes on the distribution and biology of each genus. Additional information on the hosts of related genera is given by Tachikawa (1978).

A key to the genera of Encyrtidae supposedly found in the Caribbean, around Cuba, is provided by Alayo & Hernández (1978: 21–27), but this is probably based mainly on descriptions. Some of the genera included (e.g. *Calocerinus* Howard, *Habrolepteryx* Ashmead) are known from Florida but not from the Neotropics, although it is quite possible that these genera may eventually be found on the islands around Cuba.

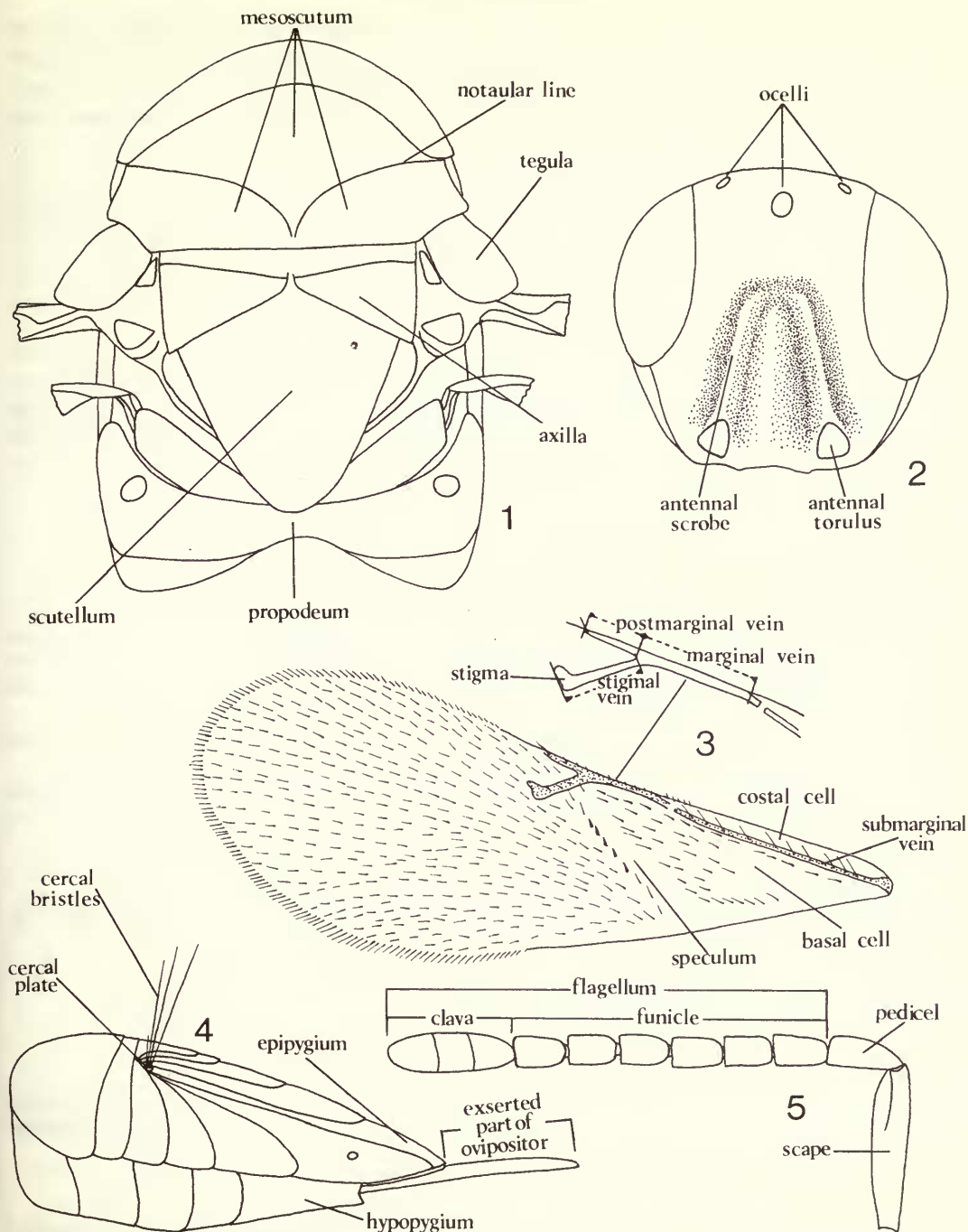
Keys to the genera of Encyrtidae found in other zoogeographical regions have been published by the following authors: Trjapitzin (1971b) for the Palaearctic; Trjapitzin & Gordh (1978a; 1978b) for the Nearctic; and Prinsloo & Annecke (1979) for the Ethiopian Region.

The keys in this review are based on the examination of material in the BMNH, London and on loan from the MLP, Argentina; USNM, Washington; UC, Riverside; CNC, Ottawa; CIBC, Trinidad and PPRI, Pretoria. For an explanation of these abbreviations see p. 111.

Notes on terms and measurements

Head (Figs 2, 5)

Antennal funicle. This does not include the anellus (or false ring-joint of Timberlake, 1922: 168, 172), which may be present or absent but is almost always hidden by the pedicel and



Figs 1-5 1, *Homalotylus flaminus* (Dalman) ♀, thorax in dorsal view; 2, generalized encyrtid head in frontal aspect; 3, generalized encyrtid left forewing in dorsal view; 4, generalized encyrtid ♀ gaster, viewed from left side; 5, generalized encyrtid ♀ antenna, left, outer aspect.

invisible in dry-mounted material. In the Encyrtidae the anellus never bears setae, whereas the funicle segments always bear setae (although sometimes very short). The relative length of the setae to the diameter of the segments can be taken directly from the text-figures.

Eye. The measurements of length and breadth are the maximum and minimum diameters respectively; the points from which the measurements are taken should be equidistant from the objective of the microscope (i.e. both in focus simultaneously).

Frontovertex width. The measurements are taken either at the level of the anterior ocellus or at the point where the frontovertex is narrowest, as stated in text.

Head width. The maximum width of the head.

Malar space. The minimum distance between the eye and the mouth margin. The measurement is taken as for the eye.

Malar sulcus. The sulcus joining the lower margin of the eye and mouth margin (see Fig. 2), sometimes absent but usually indicated by a slight change of sculpture.

Mandibles. The dentition can vary as follows: without teeth, with one long curved tooth (Fig. 54), one tooth and a truncation (Fig. 91), two teeth (Figs 40, 55, 56), two teeth and a truncation (Figs 47, 72, 73, 100, 103, 104, 105, although those in Figs 100 and 104 may also be considered tridentate), two teeth and a rudimentary third tooth (Fig. 102), three teeth (Fig. 97) or four teeth (Fig. 46).

OOL. The minimum distance *between* the eye margin and the adjacent posterior ocellus.

POL. The minimum distance *between* the posterior ocelli.

Thorax (Figs 1, 3)

Forewing.

Marginal vein: measured from where the submarginal vein reaches the anterior margin of the wing (as shown in Fig. 3) or from where the anterior edge of the venation at the junction of the submarginal vein and marginal vein is abruptly angled and not from the subapical hyaline break of the submarginal vein.

Postmarginal vein: measured as shown in Fig. 3, its apex usually indicated by a single, relatively long seta.

Speculum (or hairless line): sometimes interrupted in the posterior half or closed near the posterior margin of the wing by from one to several lines of setae on the dorsal surface of the wing.

Stigmal vein (or radial vein of some authors): measured as shown in Fig. 3.

Notaular lines (or parapsidal lines of some authors). These are occasionally difficult to see in dry-mounted material unless viewed under correct light conditions.

Propodeum. The length is measured along the mid-line.

Scutellum. The length is measured along the mid-line; the breadth excludes the axillae.

Gaster (Fig. 4)

Cerci (or pygostyles of some authors). The relative position is measured in dry-mounted material; if it is measured in material which has been in alcohol or slide-mounted, the gaster may be distended and the cerci will be positioned relatively nearer to the apex.

Gonostylus. The third valvula, or ovipositor sheath as seen in slide-mounted material.

Hypopygium (or subgenital plate of some authors). The relative position of the apex measured in dry-mounted material.

Ovipositor. The relative length of the exerted part measured in dry-mounted material. If material has been in alcohol the gaster may be distorted and the ovipositor appear to be relatively more exerted; in this case it would be better to use relative lengths of the exerted parts of the gonostyli.

Ovipositor sheath. The gonostylus as seen in dry-mounted material.

Abbreviations

AMNH, New York	American Museum of Natural History, New York, U.S.A.
BMNH, London	British Museum (Natural History), London, U.K.
CIBC, Trinidad	Commonwealth Institute of Biological Control, Trinidad, West Indies.
CNC, Ottawa	Biosystematics Research Institute, Ottawa, Canada.
MLP, Argentina	Facultad de Ciencias Naturales y Museo, La Plata, Argentina.
PPRI, Pretoria	Plant Protection Research Institute, Pretoria, South Africa.
UC, Riverside	University of California, Riverside, California, U.S.A.
USNM, Washington	National Museum of Natural History, Washington, D.C., U.S.A.
ZI, Leningrad	Zoological Institute, Academy of Sciences, Leningrad, U.S.S.R.

Key to genera (females)

The following genera are not included because the females are unknown, the unique type is missing or their presence in the Neotropics is doubtful: *Atelaphycus*, *Baeoencyrtus*, *Echthroplexiella*, *Parencyrtus*, *Prionomitus*.

- 1 Antenna with funicle composed of two to four anelliform segments, clava long and unsegmented (Fig. 6). Tarsi four-segmented **ARRHENOPHAGUS** (p. 178)
- Antenna not as above. Tarsi five-segmented 2
- 2 (1) Funicle four-segmented 3
- Funicle five- or six-segmented 7
- 3 (2) Body dark. Propodeum relatively short centrally, at most one-sixth as long as scutellum 4
- Body orange, or, if dark, then propodeum smooth and relatively long centrally, at least one-third as long as scutellum.
Funicle five-segmented, but first funicle segment anelliform and almost hidden, giving funicle four-segmented appearance (Fig. 7) 7
- 4 (3) All funicle segments longer than broad, usually at least twice as long as broad **HOMALOPODA** (p. 203)
- Funicle segments at most quadrate, usually transverse 5
- 5 (4) Anterior margin of frontovertex above antennal scrobes sharply margined. Frontovertex and mesoscutum very smooth and shiny. Forewing at least slightly infumate towards base but without distinct hyaline spots. Marginal vein more or less quadrate (Fig. 9).
Stigmal vein sessile. **BRACHYPLATYCERUS** (p. 183)
- Anterior margin of frontovertex above antennal scrobes rounded. Frontovertex with sculpture distinct and deeper than that on mesoscutum. Forewing hyaline, or, if darkened then with several hyaline spots. Marginal vein at least twice as long as broad 6
- 6 (5) Forewing infusate with several hyaline spots **PSEUDHOMALOPODA** (p. 225)
- Forewing hyaline **PLAGIOMERUS** (p. 222)
- 7 (2, 3) Funicle five-segmented 8
- Funicle six-segmented 28
- 8 (7) Forewing shortened, hardly reaching base of gaster 9
- Forewing of normal length, at least reaching apex of gaster 10
- 9 (8) Clava three-segmented. Notaular lines present on mesoscutum. Scutellum of normal shape with rounded apex which extends well beyond posterior margins of axillae (Fig. 8). Cerci situated in basal half of gaster **SOLENAPHYCUS** (p. 230)
- Clava two-segmented. Notaular lines absent. Scutellum almost rectangular with posterior margin hardly extending past posterior margins of axillae (Fig. 11). Cerci situated in apical half of gaster. **STEMMATOSTERES** (p. 230)

- 10 (8) Funicle segments distinctly flattened (the first longer than broad), broadening apically so that sixth is transverse and about one and a half times as broad as and three-quarters as long as first and about one and a half times as broad as scape (Fig. 10) *ANARHOPUS* (p. 173)
 - Funicle segments cylindrical, first segment often anelliform. 11
- 11 (10) First funicle segment anelliform, at most one-seventh as long as and about half as wide as second which is subquadrate or longer than broad (Fig. 7). 12
 - First funicle segment not anelliform, or, if anelliform then second is at most only slightly longer and broader and distinctly transverse 13
- 12 (11) Exserted part of ovipositor equal to about one-third length of gaster. Propodeum relatively short centrally, at most one-eighth as long as scutellum
APHYCOMASTIX (p. 175)
 - Ovipositor not or hardly protruding. Propodeum relatively long and shiny centrally, at least one-third as long as scutellum *MEROMYZOBIA* (p. 212)
- 13 (11) Exserted part of ovipositor equal to at least one-sixth length of gaster, or, if ovipositor not as far exserted then body completely yellow except for one or two dark brown bands on gaster 14
 - Ovipositor not or hardly protruding, gaster never yellow with dark bands 20
- 14 (13) Clava one- or two-segmented *TIMBERLAKIA* (p. 233)
 - Clava three-segmented 15
- 15 (14) First and second funicle segments anelliform, contrasting greatly with third to fifth segments which are subquadrate or longer than broad (Fig. 14) *AMEROMYZOBIA* (p. 172)
 - All funicle segments transverse (occasionally apical segments subquadrate) and gradually lengthening towards apex of antenna, never with first and second segments contrasting as greatly with third as above 16
- 16 (15) Head and thorax generally shining dark brown, mesopleuron dark brown 17
 - Head and thorax yellow or orange, or, if darker then not shiny and with venter and sides of thorax, including mesopleuron, white or yellow or occasionally pale brown 19
- 17 (16) Interantennal prominence clothed in dense white setae. Sculpture of scutellum deep and contrasting with the much shallower sculpture of mesoscutum. Mid tibia yellow with two brown bands *ARCHINUS* (p. 176)
 - Interantennal prominence clothed in sparse dark setae. Sculpture of scutellum more or less the same as mesoscutum. Mid tibia without brown bands. 18
- 18 (17) First to fourth funicle segments transverse, fifth quadrate. Legs completely yellow *BOTHRIOCRAERA* (p. 182)
 - All funicle segments longer than broad. Legs at least partially darkened *ARHOPOIDIELLA* (p. 177)
- 19 (16) Antenna yellow or orange, unicolorous *ACEROPHAGUS* (p. 169)
 - Clava with at least the two apical segments white contrasting sharply with the dark brown segments of the funicle *PSEUDAPHYCUS* (p. 225)
- 20 (13) Scutellum long with apical tongue-like extension which overhangs propodeum and curls downwards so that its apex touches posterior margin of propodeum (as in Fig. 12). Frontovortex with a few, very long, conspicuous setae. Clava very large and as wide as long, much wider than funicle. Submarginal vein of forewing with very well-marked triangular expansion near its apex (as in Fig. 13) *BLANCHARDISCUS* (p. 182)
 - Scutellum of normal form, not overhanging propodeum. Frontovortex with short setae. Clava longer than broad. Submarginal vein occasionally with triangular expansion. 21
- 21 (20) Malar space very long, about one and a half times length of eye (Fig. 21) *ARRHENOPHAGOIDEA* (p. 178)
 - Malar space much less than length of eye 22

- 22 (21) Forewing hyaline, or, if slightly infumate then mesoscutum has more or less complete notaular lines 23
 – Forewing more or less uniformly infumate. Mesoscutum entire.
 Funicle six-segmented, but first funicle segment very short and sometimes hidden by pedicel in dry mounted specimens, giving funicle five-segmented appearance 28
- 23 (22) Clava four-segmented (Fig. 16) **TETARTICLAVA** (p. 232)
 – Clava at most three-segmented 24
- 24 (23) Hypopygium not reaching apex of gaster, at most reaching about two-thirds along gaster. Marginal vein broader than long, or, if slightly longer than broad then colour of head and thorax orange 25
 – Hypopygium reaching apex of gaster. Marginal vein longer than broad. Head and thorax dark brown or black 26
- 25 (24) Mesoscutum with complete notaular lines (Fig. 8). Marginal vein punctiform or slightly longer than broad. Clava apically rounded. Head and thorax orange
SOLENA PHYCUS (p. 230)
 – Mesoscutum entire. Marginal vein distinctly broader than long (as in Fig. 126). Clava obliquely truncate (Fig. 15). Head and thorax dark brown
PENTALITOMASTIX (p. 222)
- 26 (24) Notaular lines complete (difficult to see in dry mounted material). Scutellum matt with much deeper sculpture than mesoscutum **COCCIDAPHYCUS** (p. 187)
 – Notaular lines absent or indicated anteriorly only. Scutellum shiny with sculpture not noticeably deeper than mesoscutum 27
- 27 (26) Funicle segments transverse. Forewing with speculum narrow, about same width as length of marginal vein and not interrupted (Fig. 20), but closed on ventral surface of wing by two lines of setae near dorsum. Mandibles tridentate.
ACEROPHAGOIDES (p. 169)
 – Funicle segments subquadrate or longer than broad. Forewing with speculum broad, much broader than length of marginal vein (Fig. 24) and interrupted by two lines of setae on dorsal surface of wing near dorsum. Mandibles bidentate
TETRACNEMOIDEA (p. 233)
- 28 (7, 22) Wings shortened, not reaching apex of gaster 29
 – Wings of normal length, reaching or exceeding apex of gaster 40
- 29 (28) Scutellum concave, or with a pit or indentation basally 30
 – Scutellum flat or convex, without pit or indentation basally 33
- 30 (29) Posterior margin of scutellum with line of longer, slightly flattened, upright setae. Scape less than twice as long as broad. **COELASPIDIA** (p. 188)
 – Posterior margin of scutellum with at most two upright setae. Scape at least two and a half times as long as broad 31
- 31 (30) Outer margins of antennal scrobes rounded. Occipital margin rounded. Scape widest at extreme apex and here with internal and external flanges that completely enclose pedicel. Eyes small, only slightly longer than minimum width of frontoververtex.
PHEIDOLOXENUS (p. 222)
 – Antennal scrobes sharply margined above and at sides. Occipital margin acute. Scape widest in middle or towards base, pedicel not enclosed. Eyes larger, more than twice as long as minimum width of frontoververtex 32
- 32 (31) Scape foliaceously flattened, widest in middle and about three times as long as broad. Mesoscutum uniformly sculptured and convex. Scutellum more or less triangular in shape with apices rounded **AEPTENCYRTUS** (p. 171)
 – Scape not foliaceously flattened, widest in basal third and about five times as long as greatest width. Mesoscutum distinctly sculptured and convex centrally, completely smooth, shiny and concave laterally. Scutellum as seen from above with sides concave in outline and almost T-shaped **PELMATENCYRTUS** (p. 221)
- 33 (29) Apex of scutellum with distinct tuft of setae 34
 – Apex of scutellum without distinct tuft of setae 35

- 34 (33) Dorsal margin of scape almost straight or uniformly curved. Clava three-segmented.
Ovipositor longer than mid tibia **CHEILONEURUS** (p. 184)
- Dorsal margin of scape abruptly bent at middle (Fig. 17). Clava two-segmented.
Ovipositor shorter than mid tibia **ACROASPIDIA** (p. 170)
- 35 (33) First funicle segment longer than pedicel, scape about eight times as long as broad.
Rudiments of forewing entirely infusate **ECTROMATOPSIS** (p. 194)
- First funicle segment shorter than pedicel, scape at most six times as long as broad.
Rudiments of forewing hyaline, suffused with yellow or infusate at base and apex 36
- 36 (35) Frontovertex broad, at narrowest point at least half as wide as head 37
- Frontovertex narrower, at narrowest point at most three-fifths as wide as head 38
- 37 (36) Mesoscutum very transverse, about four times as broad as long. Scutellum with apex
more or less square. Axillae separated by almost their own width (Fig. 18). Cerci very
near base of gaster. Antenna with clava white contrasting with dark funicle
segments. Body fairly robust **NEODUSMETIA** (p. 216)
- Mesoscutum not as transverse as above, only slightly broader than long. Scutellum with
apex well rounded. Axillae more or less touching (as in Fig. 19). Cerci nearly half way
along gaster. Antenna with clava and funicle usually unicolorous or with clava darker
than funicle, never with clava paler than funicle. Body dorso-ventrally flattened
RHOPUS (p. 226)
- 38 (36) Rudiment of forewing infusate at base and apex. Mandibles bidentate **ECTROMA** (p. 194)
- Rudiment of forewing hyaline or suffused pale yellow. Mandibles not bidentate. 39
- 39 (38) Head and thorax completely orange. Forewing rudiment transversely truncate.
Mandibles with three acute teeth **MUCRENCYRTUS** (p. 213)
- At least thorax dark and metallic. Forewing rudiment more or less rounded, not
transversely truncate. Mandibles with one or two teeth and a truncation
OOENCYRTUS (p. 217)
- 40 (28) Scape not more than three times as long as its greatest width 41
- Scape more than three times as long as its greatest width 90
- 41 (40) Forewing darkened (excluding those species with very small darkened area below
marginal vein which hardly extends past apex of stigmal vein, or those where
infumation is very weak and almost imperceptible). 42
- Forewing hyaline or with almost imperceptible infumation (also including those species
with a very small darkened area below marginal vein which hardly extends past apex
of stigmal) 66
- 42 (41) Funicle segments and clava flattened, at least segments four to six of funicle more or less
as wide as clava and almost parallel sided (Figs 22, 23). Funicle segments often
articulated near dorsal edge and with long curved ventral process 43
- Funicle segments and clava not flattened, more or less cylindrical or oval in cross-
section, or, if appearing slightly flattened then flagellum distinctly club-shaped, the
clava much wider than majority of funicle segments which gradually widen towards
apex of antenna. Funicle segments articulated in middle and never with ventral
process 50
- 43 (42) Stigmal vein short, at most one-third as long as marginal (Fig. 25). Exserted part of
ovipositor at least half as long as gaster **TETRACNEMUS** (p. 233)
- Stigmal vein longer, at least half as long as marginal. Exserted part of ovipositor at most
one-third as long as gaster in all known South American species 44
- 44 (43) Forewing with two fuscous fasciae, one arising from marginal vein (incomplete) and
other about half way along submarginal, sometimes expanded into a triangular
blotch, areas either side of the outermost fascia paler than wing apex. Head and
thorax orange or reddish with rather coarse punctate sculpture which gives a silky
appearance **ANAGYRUS** (p. 173)
- Infusate areas of forewing not represented by fasciae, usually more extensive. Head
and thorax dark, or, if orange then mesoscutum with shallow reticulate sculpture
which is quite shiny 45

- 45 (44) Marginal vein very short, almost punctiform, stigmal and postmarginal veins both at least four times as long as marginal, stigmal curved towards anterior margin of wing (Figs 26, 27) 46
 – Marginal vein relatively longer, at least half as long as stigmal 47
- 46 (45) Forewing: postmarginal vein distinctly longer than stigmal, costal cell with two or three lines of setae ventrally, upper surface of wing below apex of submarginal vein with at least four lines of normal setae nearly reaching the dorsum (often basal cell completely pilose), basal cell infumate (Fig. 27). Mesoscutum and scutellum entirely of similar sculpture, scutellum at most slightly convex and without distinct tuft or line of setae at apex *ZAPLATYCERUS* (p. 235)
 – Forewing: postmarginal vein at most as long as stigmal, costal cell with no more than one complete line of setae ventrally, upper surface of forewing below apex of submarginal vein with at most one line of setae nearly reaching dorsum (usually not reaching half way across wing), some of these flattened and scale-like, basal cell almost completely hyaline (Fig. 26). At least part of mesoscutum or scutellum smooth and shiny, contrasting with sculptured areas, scutellum strongly convex and with tuft or line of setae at apex *CHRYSOPLATYCERUS* (p. 185)
- 47 (45)* Body dorso-ventrally flattened. Forewing with one or two longitudinal fuscous streaks. Frontovortex usually yellow with median dark stripe *COMPERIELLA* (p. 189)
 – Body robust. Forewing more or less uniformly infusate from speculum to near apex. Frontovortex unicolorous, occasionally darker between ocelli 48
- 48 (47) Infuscation of forewing enclosed subapically by darker band, or at least with setae appearing to be more dense in this band (Fig. 30) *ANICETUS* (p. 174)
 – Infuscation of forewing not enclosed subapically by darker band 49
- 49 (48) Funicle segments broadening towards apex of antenna so that clava is distinctly broader than first three (Fig. 23). Frontofacial ridge prominent and continuous across face *HOMOSEMION* (p. 203)
 – Funicle segments slightly but distinctly narrowing towards apex of antenna so that clava is narrower than funicle (Fig. 22). Interantennal prominence confluent with frontovortex so that frontofacial ridge is interrupted in middle *AMMONOENCYRTUS* (p. 172)
- 50 (42) Clava entire 51
 – Clava three-segmented 52
- 51 (50) Pedicel apically with several conspicuous very long setae on dorsal surface (Fig. 31). Marginal and postmarginal veins more or less equal in length and stigmal about one and a half times as long as either (Fig. 29). Body colour orange to dark brown. Mandibles bidentate *HAMBLETONIA* (p. 200)
 – Pedicel apically without conspicuous setae on dorsal surface. Marginal vein short, almost punctiform and several times shorter than the long postmarginal or stigmal, the latter being strongly curved towards anterior margin of wing (Fig. 28). Body colour shining green or blue. Mandibles tridentate *ZARHOPALUS* (p. 235)
- 52 (50) First funicle segment about twice as long as pedicel. Forewing with two fuscous bands, one arising at marginal vein and other about half way along submarginal (latter may extend almost to base of wing), apex and base of wing infumate but paler. Mandibles bidentate (as in Fig. 40) *ANAGYRUS* (p. 173)
 – First funicle segment at most one and half times as long as, usually shorter than, pedicel. Forewing not infusate as above. Mandibles rarely bidentate, usually tridentate or quadridentate 53
- 53 (52) Apex of scutellum and occipital margin between eyes each with two lamelliform setae (Fig. 32) *HABROLEPIS* (p. 199)
 – Apex of scutellum and occipital margin without lamelliform setae 54

* Note added while this paper was in press: *Cerapterocerus* Westwood (see footnote, p. 107) runs here, but differs from the other included genera in the body not being dorso-ventrally flattened, the forewing having several sharply delimited wedge-shaped hyaline areas and the submarginal vein having a distinct triangular expansion.

- 54 (53) Apex of scutellum with long tuft of setae, or, if tuft not distinct then exerted part of ovipositor is about half as long as gaster. Forewing more or less uniformly infusate from bend of submarginal vein to at least near apex (occasionally a broad hyaline band at apex) 55
- Apex of scutellum without long tuft of setae. Ovipositor hidden or if slightly protruding than exerted part is less than one-fifth as long as gaster. Forewing with distinct hyaline spots or band of paler setae between marginal vein and apex 59
- 55 (54) Mesoscutum usually with median tuft of setae, or, if absent then submarginal vein has small but distinct triangular expansion in apical third below which is a tuft of bristles and infusate area delimited subapically by darker band. Marginal vein not or hardly longer than stigmal 56
- Mesoscutum without central tuft of setae. Submarginal vein without small triangular expansion. Marginal vein at least slightly longer than stigmal, usually more than twice as long 57
- 56 (55) Mesoscutum with median tuft of setae. Infusate area of forewing not delimited by darker band subapically *DIVERSINERVUS* (p. 193)
- Mesoscutum without median tuft of setae. Infusate area of forewing delimited subapically by darker band (as in Fig. 30) genus A (p. 169)
- 57 (55) Marginal vein at most about one and a half times as long as stigmal, postmarginal at least half as long as marginal (Fig. 38), infuscation of forewing very slight. Hypopygium extending at most half way along gaster. Exserted part of ovipositor equal to at least half length of gaster *ICEROMYIA* (p. 204)
- Marginal vein at least twice as long as stigmal and four times postmarginal. Infuscation of forewing strong (Figs 35, 36). If ovipositor is as long as above then hypopygium extends to apex of gaster or infuscation of forewing is very strong 58
- 58 (57) Epipygium shortened, giving apex of gaster a squared-off appearance (gaster sometimes collapses upwards and inwards laterally giving it a tapered appearance). Hypopygium reaching apex of gaster. Apical hyaline area of forewing, at widest, about equal to half maximum width of wing and with well-delimited strongly curved inner margin, subparallel to wing apex (Fig. 35). Exserted part of ovipositor always at least half as long as gaster *PROCHILONEURUS* (p. 223)
- Epipygium long and triangular giving gaster a gradually tapered appearance. Hypopygium at most reaching about two-thirds along gaster. Forewing without apical hyaline area, or, if area present then its inner margin not well delimited but usually wedge-shaped, not subparallel to apical margin (Fig. 36). Ovipositor usually more or less hidden, occasionally exserted part long, but always shorter than half length gaster *CHEILONEURUS* (p. 184)
- 59 (54) Forewing with several hyaline spots on margin. Head triangular in side view with planes of face and frontovertex forming a strongly acute angle (Fig. 33) *ANABROLEPIS* (p. 172)
- Forewing without hyaline spots, generally uniformly infusate or gradually becoming paler towards apex or with one or more transverse, often interrupted, hyaline fasciae. Head in side view more or less gradually curved (except in *Hemaenasius* which has base of forewing infumate and gradually fading towards wing apex) 60
- 60 (59) First funicle segment distinctly transverse, or, if subquadrate then at most half as long as pedicel 61
- First funicle segment longer than broad, or, if subquadrate then at least two-thirds as long as pedicel 65
- 61 (60) Forewing more or less uniformly infusate or gradually becoming paler towards apex, without hyaline bands or band of paler setae between marginal vein and apex. Pronotum more or less same colour as mesoscutum 62
- Forewing with at least one hyaline band or a band of paler setae distal of marginal vein. Pronotum often paler than mesoscutum 64
- 62 (61) Occipital margin sharp. Forewing with basal cell totally infumate. Hypopygium reaching apex of gaster. Eyes reaching occipital margin. Head and thorax shining black, blue or green 63

- Occipital margin not sharp. Forewing with basal cell hyaline. Hypopygium not reaching apex of gaster. Eyes separated from occipital margin by distance about the same as diameter of posterior ocellus (Fig. 34). Head and thorax brown **HUNTERELLUS** (p. 204)
- 63 (62) Head more or less lenticular, usually with thimble-punctured sculpture. Flagellum club-shaped and clava as least as long as funicle (Fig. 62). Costal cell with at least two or three lines of setae dorsally **AENASIUS** (p. 170)
- Head not lenticular, often abruptly bent at level with top of antennal scrobes, frontovertex smooth and shiny. Flagellum not club-shaped and clava slightly shorter than funicle (Fig. 51). Costal cell dorsally with at most a few setae at apex **HEMAENASIUS** (p. 202)
- 64 (61) Femora as well as tibia with contrasting light and dark bands or areas. Forewing: basal cell with setae on dorsal surface extremely dense, as dense as in centre of wing, distal side of infusate area with a distinct band of paler setae **[Dicarnosis] blanchardi** De Santis (p. 193)
- At most only mid and hind tibiae with pronounced dark bands. Forewing: basal cell usually with setae on dorsal surface markedly less dense than, rarely as dense as, in centre of wing, distal side of infusate area without band of paler setae **METAPHYCUS** (p. 212)
- 65 (60) Dorsum of thorax, frontovertex and mesopleura with dense punctiform sculpture. Upper surface of basal cell with setae as dense as in centre of wing. Eyes distinctly hairy. Mandibles with two teeth and a truncation **COMPERIA** (p. 189)
- Dorsum of thorax almost smooth, with shallower less dense sculpture. Upper surface of basal cell with setae much less dense than centre of wing and usually with bare area. Eyes not distinctly hairy. Mandibles usually with three acute teeth **MICROTERTYS** (p. 213)
- 66 (41) All funicle segments longer than broad 67
- Not all funicle segments longer than broad. 71
- 67 (66) First funicle segment at most one and a half times as long as broad. Mandibles tridentate or with one tooth and a broad truncation or without teeth 68
- First funicle segment at least twice as long as broad. Mandibles bidentate (Fig. 40) 69
- 68 (67) Scutellum rather convex and with similar sculpture to mesoscutum. Pedicel subequal in length to first funicle segment, clava at most as long as the combined lengths of funicle segments four to six (Fig. 37) **GAHANIELLA** (p. 197)
- Scutellum flat with deeper sculpture than mesoscutum. Pedicel longer than first funicle segment, clava nearly as long or longer than the funicle (as in Fig. 39) **COCCIDENCYRTUS** (p. 188)
- 69 (67) Sculpture of frontovertex shallow and finer so that it is distinctly shiny, never orange or yellow, usually black **APOANAGYRUS** (p. 176)
- Sculpture on frontovertex coarsely punctate giving it a matt or silky appearance, never shiny and often yellow or orange 70
- 70 (69) Postmarginal vein shorter than stigmal (Figs 70, 71). Face usually with conspicuous, moderately dense white setae. Sculpture on frontovertex irregular and silky in appearance **ANAGYRUS** (p. 173)
- Postmarginal vein at least about twice as long as stigmal. Pale setae present on head, but never conspicuous. Sculpture on frontovertex more regular and polygonal, not silky in appearance **GYRANUSOIDEA** (p. 199)
- 71 (66) Apex of scutellum with a tuft of setae, or, if this is inconspicuous then normally at least posterior half of mesoscutum with silvery white setae which contrast with the darker colour of the mesoscutum, scutellum with dark setae. Usually at least anterior one-third of mesoscutum with fine striate sculpture. Frontovertex shiny, thorax and head dark **ZAOMMA** (p. 235)

- Apex of scutellum without tuft of setae (in majority of species only two upright setae). Mesoscutum without silvery setae, or, if these are present and contrast with dark colour of mesoscutum then scutellum also has silvery setae, frontoververtex is matt and thorax and head usually have paler areas 72
- 72 (71)* Body distinctly dorso-ventrally flattened. Cerci situated about half way along gaster. Ovipositor not protruding. Mandibles long and narrow with teeth of equal length *RHOPUS* (p. 226)
- Body robust, or if flattened, then cerci are situated near base of gaster (mandibles may be bidentate, but here upper tooth is very long and curved and lower tooth short) or mandibles are clearly tridentate and the exerted part of the ovipositor is equal to at least one-quarter length of gaster 73
- 73 (72) Clava two-segmented 74
- Clava three-segmented 75
- 74 (73) Frontoververtex with distinct sculpture. Antennal scrobes moderately impressed and horse-shoe shaped. Exserted part of ovipositor equal to about one-quarter length of gaster and more or less straight, not curved downwards *TANYENCYRTUS* (p. 231)
- Frontoververtex highly polished. Antennal scrobes absent or represented by an extremely shallow groove much shorter than length of torulus (as in Fig. 41). Exserted part of ovipositor equal to at least about half length of gaster and distinctly downcurved *SHENAHETIA* (p. 227)
- 75 (73) Body foliaceously dorso-ventrally flattened (Fig. 42). Exserted part of ovipositor at least one-third length of gaster and with sheaths bilaterally flattened *MARIOLA* (p. 210)
- Body robust. Ovipositor not exerted as much as above, or if so, then sheaths are cylindrical 76
- 76 (75) Head at least with some orange or yellow areas, or, if head completely darkened then matt in appearance and pronotum paler than mesoscutum 77
- Head dark and shiny, or, if head not distinctly shiny then pronotum the same colour as mesoscutum 79
- 77 (76) Clava apically rounded *METAPHYCUS* (p. 212)
- Clava obliquely truncate (Fig. 43, cf. Fig. 44) 78
- 78 (77) Exserted part of ovipositor as long as at least half length of gaster. At least mesoscutum dark and metallic. Marginal vein at least twice as long as broad (as in Fig. 38) *ICEROMYIA* (p. 204)
- Ovipositor not or hardly visible. Thorax completely orange; marginal vein punctiform (Fig. 150) *BENNETTISCA* (p. 180)
- 79 (76) Pedicel and all funicle segments subequal in length and breadth and subquadrate or longer than broad (as in Fig. 37), frontoververtex at narrowest point at least three-eighths head width. Mandibles without teeth or with one tooth and a broad truncation *GAHANIELLA* (p. 197)
- Pedicel distinctly longer than first funicle segment, or, if not then funicle distinctly broadens apically or the frontoververtex at its narrowest point is less than one-third head width and the funicle segments are distinctly not quadrate 80
- 80 (79) Clava shorter than funicle, at most as long as the combined lengths of funicle segments three to six 81
- Clava almost as long or longer than funicle, at least as long as the combined lengths of funicle segments two to six 86

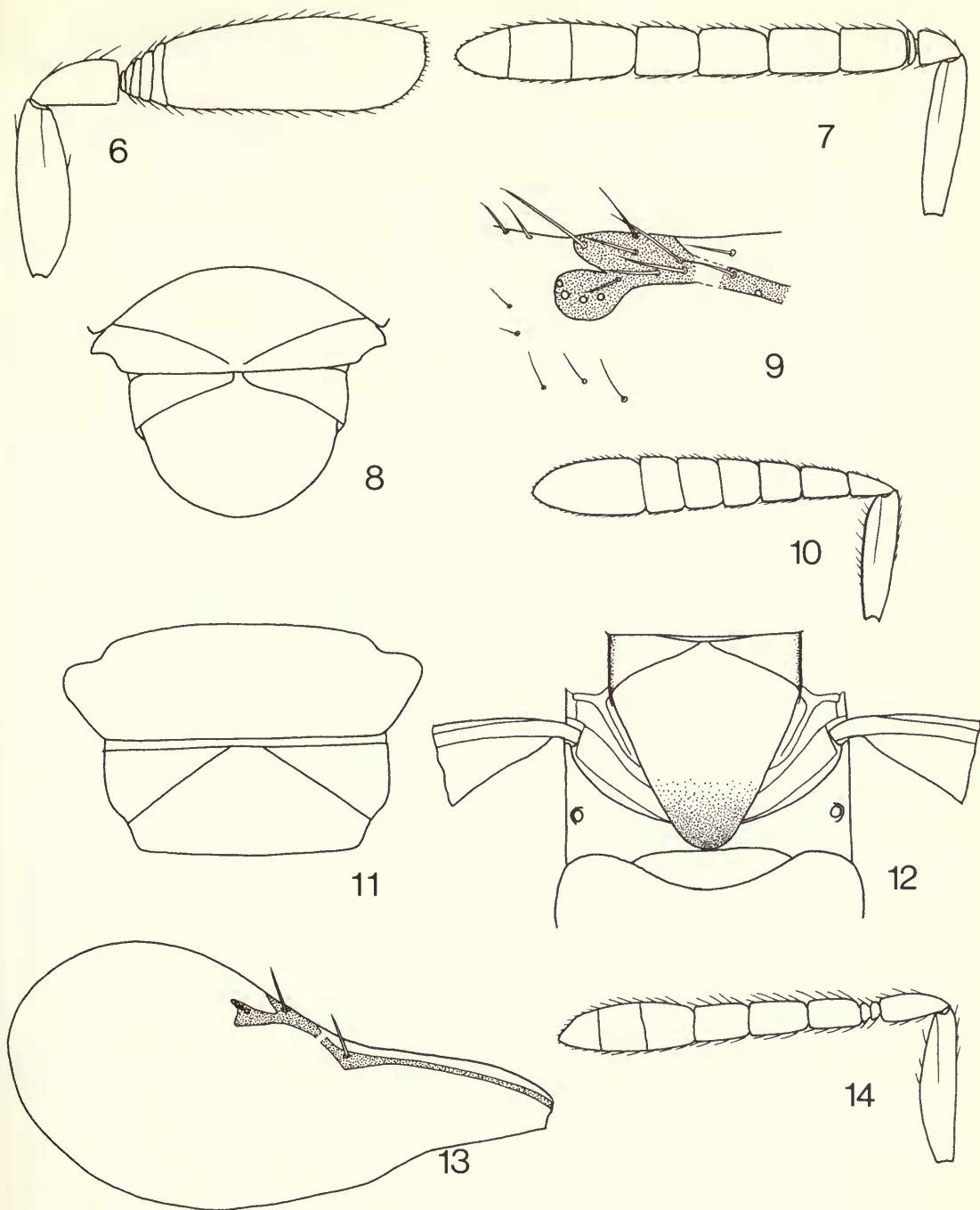
* Note added while this paper was in press. *Asitus* Erdős, *Boucekiella* Hoffer and *Platencyrtus* Ferrière (see footnote on p. 107) all run here but may be distinguished by having an extremely flattened leaf-like body. *Asitus* has bidentate mandibles, a longitudinally divided pronotum and the forewing with a very long marginal fringe, at least one-fifth maximum width of wing; *Boucekiella* has tridentate mandibles, as does *Platencyrtus*, and has the submarginal vein with a subapical triangular expansion (absent in *Platencyrtus*) and the ovipositor exerted for a length equal to one-third of gaster (the ovipositor is not exerted in *Platencyrtus*).

- 81 (80) Head with large, shiny bottomed thimble-punctures. Scutellum convex with rough sculpture. Hypopygium not reaching apex of gaster . . . *HELMECEPHALA* (p. 200)
 – Head without large thimble-punctures, or if present (*Zeteticontus*), then scutellum is quite flat, smooth and shiny, and the hypopygium reaches apex of gaster . . . 82
- 82 (81) Eyes over-reaching occipital margin and with very short indistinct hairs. Frontoververtex with inconspicuous hairs. Ocelli usually forming a distinctly acute angle. Scutellum convex, usually with deep sculpture, but occasionally smooth.
 Mandibles with one or two teeth and truncation . . . *OOENCYRTUS* (p. 217)
 – Eyes not over-reaching occipital margin, or, if so then with conspicuous hairs. Frontoververtex with long, conspicuous hairs. Ocelli usually forming a right or obtuse angle, or, occasionally a slightly acute angle. Scutellum more or less flat, usually smooth and shiny, without distinct sculpture . . . 83
- 83 (82) Eyes separated from occipital margin, which is more or less rounded, by a distance about same as diameter of posterior ocellus (Fig. 34) . . . *HUNTERELLUS* (p. 204)
 – Eyes separated from occipital margin, which is sharp, by much less than half diameter of posterior ocellus . . . 84
- 84 (83) Mandibles with three acute teeth. Hypopygium reaching apex of gaster . . . *ZETETICONTUS* (p. 236)
 – Either the hypopygium does not reach apex of gaster, or mandibles are bidentate with upper tooth long and curved and lower tooth short (Figs 55, 56) . . . 85
- 85 (84) Mandibles tridentate. Propodeum at most one-eighth as long as scutellum and without distinct sculpture centrally . . . *EXORISTOBIA* (p. 196)
 – Mandibles bidentate (Figs 55, 56). Propodeum at least one-sixth as long as scutellum and with distinct sculpture centrally (as in Fig. 121) . . . *RHYTIDOTHORAX* (p. 226)
- 86 (80) Mesoscutum with distinct longitudinally striate sculpture . . . *DESOBIUS* (p. 192)
 – Mesoscutum not with striate sculpture . . . 87
- 87 (86) Scutellum with coarser sculpture than mesoscutum, giving it a matt (or less shiny) appearance in contrast with the shiny appearance of the mesoscutum . . . 88
 – Scutellum with similar sculpture to mesoscutum, both shiny . . . 89
- 88 (87) Mandibles quadridentate (Fig. 46). Mid tibia completely yellow without dark bands . . . *ADELENCYRTUS* (p. 170)
 – Mandibles with one or two teeth and a truncation, mid tibia often brown, or, yellow with dark bands . . . *COCCIDENCYRTUS* (p. 188)
- 89 (87) Funicle and clava unicolorous, brown . . . *COELOPENYRTUS* (p. 189)
 – Funicle yellow, contrasting with the brown clava . . . *[?Coccidencyrtus maculicornis (Blanchard)]* (p. 188)
- 90 (40) Hind tibia distinctly flattened (Fig. 45). Forewing with central oval fuscous spot or fascia. Mesoscutum with notaular lines (one specimen from Panama which may belong here has mesoscutum entire and clava obliquely truncate) . . . *MOORELLA* (p. 213)
 – Hind tibia not flattened, or, if flattened then mesoscutum entire or forewing hyaline . . . 91
- 91 (90) Eyes nearly reaching base of mandible, malar space at most about one-fifth length of eye (usually not more than one-tenth), apex of clypeus slightly produced outwards (Fig. 48).
 Notaular lines completely absent. Head and thorax completely metallic green or blue. Clava obliquely truncate . . . *PARABLASTOTHRIX* (p. 218)
 – Malar space much longer than above and clypeus normal . . . 92
- 92 (91) Forewing darkened (excluding those species with small fuscous spot below marginal vein which does not or hardly extends past apex of stigmal vein, or, with forewing suffused pale yellow) . . . 93
 – Forewing hyaline (including those species with small fuscous spot below marginal vein which does not or hardly extends past apex of stigmal vein, or with forewing suffused pale yellow) . . . 145

- 93 (92) Apex of scutellum with tuft of long setae at apex 94
 - Apex of scutellum without tuft of setae (usually two erect setae in most species) 96
- 94 (93) Marginal vein short, postmarginal and stigmal veins long, at least about twice as long as marginal (Fig. 49). Mandibles without teeth *ENCYRTUS* (p. 195)
 - Marginal vein at least twice as long as stigmal (Figs 35, 36). Mandibles with at least two acute teeth 95
- 95 (94) Epipygium shortened giving gaster a truncate appearance (gaster sometimes collapses upwards and inwards laterally giving it a tapered appearance). Hypopygium reaching apex of gaster. Apical hyaline area of forewing, at widest, equal to about half maximum width of wing and with a well-delimited, strongly curved inner margin subparallel to wing apex (Fig. 35). Exserted part of ovipositor always equal to at least half length of gaster *PROCHILONEURUS* (p. 223)
 - Epipygium long and triangular giving it a gradually tapered appearance. Hypopygium at most reaching two-thirds along gaster. Forewing without apical hyaline area, or, if area present then its inner margin not well delimited but usually wedge-shaped, not subparallel to apical margin (Fig. 36). Ovipositor generally more or less hidden, occasionally exserted part long, but always shorter than half length of gaster.. . . . *CHEILONEURUS* (p. 184)
- 96 (93) Exserted part of ovipositor at least one-fifth as long as gaster 97
 - Exserted part of ovipositor at most one-sixth as long as gaster 108
- 97 (96) Mesoscutum with complete notaular lines (as in Fig. 1) 98
 - Mesoscutum entire or with notaular lines indicated in anterior half only 99
- 98 (97) Clava apically rounded. Mid and hind tibiae each yellow with two brown rings *TYNDARICHOIDES* (p. 234)
 - Clava apically obliquely truncate (as in Fig. 50). Mid and hind tibiae without dark rings 99
- 99 (97, 98) Infuscation of forewing restricted to median oval spot below stigmal and marginal veins, occasionally moderately large and extending over whole of central third of wing, but at least basal and apical thirds of wing hyaline. At least one funicle segment quadrate or transverse. Notaular lines usually anteriorly indicated. Exserted part of ovipositor equal to at least half length of gaster. Hypopygium reaching apex of gaster 100
 - Infuscation of forewing usually more extensive (less extensive in some genera) and often pale, or, if similar to above then all funicle segments longer than broad. Notaular lines completely absent. Exserted part of ovipositor occasionally as long or longer than above. Hypopygium sometimes reaching apex of gaster 102
- 100 (99) Notaular lines more or less complete, at least nearly reaching posterior margin of mesoscutum (as in Fig. 1). Clava solid and obliquely truncate (as in Fig. 50) *HOMALOTYLUS* (p. 203)
 - Either notaular lines are indicated at anterior margin of mesoscutum only, or, clava is segmented and apically rounded and notaular lines reach at most two-thirds across mesoscutum 101
- 101 (100) Ovipositor sheaths, in side view, distinctly tapering towards apex and relatively deep at apex of gaster, at least one and a half times as deep as maximum breadth of scape *AZTECENCYRTUS* (p. 180)
 - Ovipositor sheaths completely cylindrical and not tapering, at apex of gaster about half as deep as maximum breadth of scape *CIRRHENCYRTUS* (p. 187)
- 102 (99) Forewing with a large, hyaline, triangular spot on anterior margin confluent with apices of postmarginal and stigmal veins and joined by a slightly curved hyaline band to a similar spot on the opposite side of the wing (Fig. 52). Hind tibia yellow with two dark bands *NEOCOCCIDENCYRTUS* (p. 216)
 - Forewing without hyaline areas as above. Hind tibia at most with one brown band 103
- 103 (102) Occipital margin rounded 104
 - Occipital margin sharp 105

- 104 (103) Epipygium broadly rounded apically giving gaster truncate appearance. Exserted part of ovipositor slightly shorter than gaster. Body more or less orange *CALLIENCYRTUS* (p. 183)
 – Epipygium elongate and triangular, overhanging base of exserted part of ovipositor. Exserted part of ovipositor longer than gaster. Body dark metallic green *DELOENCYRTUS* (p. 191)
- 105 (103) Ovipositor sheaths distinctly flattened, together more than twice as deep as broad in dorsal view *HEMENCYRTUS* (p. 202)
 – Ovipositor sheaths cylindrical or oval in cross section. 106
- 106 (105) Stigmal vein longer than marginal. Infuscation of forewing weak, not extending past stigmal vein towards wing apex. Hypopygium extending about half way along gaster. Mesoscutum orange with contrasting dark brown setae *APHYCOMORPHA* (p. 175)
 – Stigmal vein short, less than one-third as long as marginal (as in Fig. 35). Infuscation of forewing stronger and extending past stigmal vein almost to wing apex. Hypopygium reaching apex of gaster. Mesoscutum with pale (usually white) setae 107
- 107 (106) All funicle segments longer than broad. Gaster long and tapered, longer than thorax *TINEOPHOCTONUS* (p. 234)
 – At least one funicle segment quadrate or transverse. Gaster apically truncate and shorter than thorax *PROCHILONEURUS* (p. 223)
- 108 (96) All funicle segments longer than broad 109
 – Not all funicle segments longer than broad 121
- 109 (108) Mesoscutum with more or less complete notaular lines (Fig. 1). Clava obliquely truncate (Fig. 50) *HOMALOTYLUS* (p. 203)
 – Mesoscutum without notaular lines, clava apically rounded 110
- 110 (109) Forewing with one or two distinct, dark sometimes incomplete fasciae (occasionally dark spot beyond second fascia and confluent with it). First funicle segment as long or longer than pedicel 111
 – Either forewing without distinct dark fasciae, or, first funicle segment distinctly shorter than pedicel 115
- 111 (110) Cerci in apical third of gaster 112
 – Cerci in basal third of gaster 113
- 112 (111) Axillae very convex and very prominent, raised about level of scutellum, scutellum posteriorly raised above level of mesoscutum. Scape reaching well above level of vertex. First funicle segment about three times as long as pedicel. Eyes separated from occipital margin by distance greater than diameter of posterior ocellus. Occipital margin strongly concave in dorsal view. Forewing with two dark fasciae, basal cell and costal cell almost completely naked *HEXACLADIA* (p. 203)
 – Axillae almost flat and on a level with scutellum which is not posteriorly raised. Scape not reaching further than anterior ocellus. First funicle segment less than twice as long as pedicel. Eyes separated from occipital margin by distance less than diameter of posterior ocellus. Occipital margin only slightly concave in dorsal view. Forewing with only one dark fascia, basal and costal cells hairy *PRIONOMASTIX* (p. 223)
- 113 (111) Postmarginal vein longer than stigmal *LEPTOMASTIDEA* (p. 206)
 – Postmarginal vein shorter than stigmal (as in Figs 70, 71) 114
- 114 (113) Malar space relatively short, less than one-quarter length of eye. Scape cylindrical, about eight times as long as broad. Forewing with only one fascia, this situated about half way along submarginal vein. Body black *ANATHRIX* (p. 174)
 – Malar space longer, nearly half as long as eye. Scape distinctly broadened and flattened, just greater than three times as long as broad. Forewings with two dark fasciae, one two-thirds along submarginal vein and the other at marginal vein. Head and thorax orange *ANAGYRUS* (p. 173)
- 115 (110) Infuscation of forewing restricted to single wedge-shaped streak (Fig. 57) or triangular mark arising at or near apex (Fig. 53). Thorax green 116

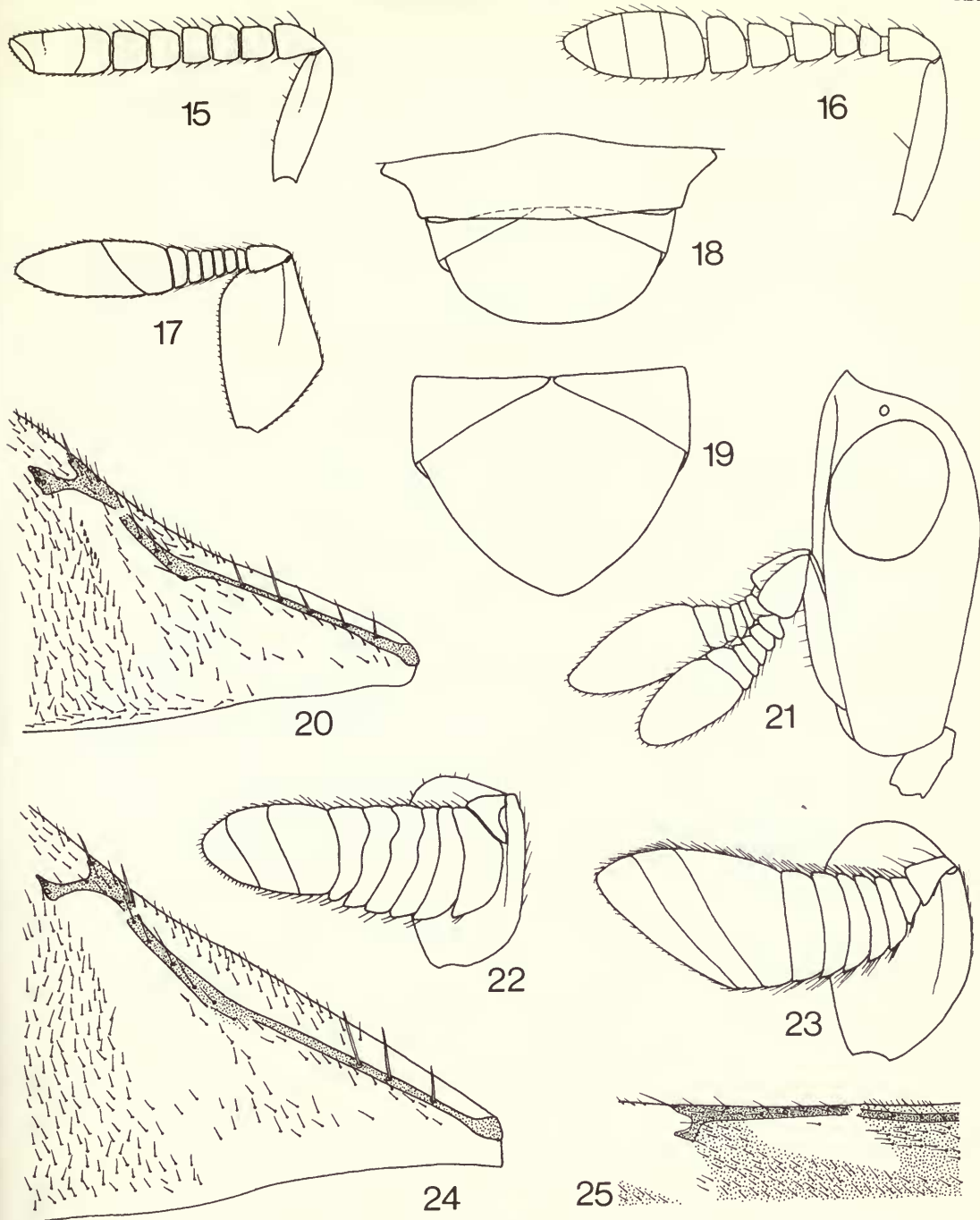
- Infuscation not triangular or wedge-shaped, or, if similar to above then thorax completely orange 117
- 116 (115) Forewing with marginal vein about seven times as long as broad, stigmal and postmarginal veins both longer than marginal (Fig. 53). Pedicel less than half as long as first funicle segment. Occipital margin acute. Mandibles bidentate *ERICYDNUS* (p. 195)
- Forewing with marginal vein at most five times as long as broad, stigmal and postmarginal veins shorter than marginal (Fig. 57). Pedicel less than half as long as first funicle segment. Occipital margin rounded. Mandibles tridentate *PARECHTHRODRYINUS* (p. 221)
- 117 (116) Marginal form punctiform, stigmal vein at least twice as long as marginal, postmarginal vein short or absent (as in Fig. 90). Infuscation restricted to large, more or less oval spot extending completely across wing below marginal vein *MUCRENCYRTUS* (p. 213)
- Marginal vein at least twice as long as broad, or nearly as long as stigmal, if stigmal longer than marginal then postmarginal long and distinct. Infuscation usually more extensive 118
- 118 (117) Occipital margin more or less rounded. Head triangular in side view (as in Fig. 33). Forewing with distinct hyaline fascia distal to marginal vein, postmarginal vein very short or absent (Fig. 52) *NEOCOCCIDENCYRTUS* (p. 216)
- Occipital margin acute. Head rounded in side view. Forewing never with hyaline fascia, postmarginal vein long 119
- 119 (118) Eyes not distinctly hairy. Forewing with speculum interrupted in lower half (as in Figs 70, 71). First funicle segment at least twice as long as pedicel. Head and thorax orange *LEPTOMASTIX* (p. 206)
- Eyes distinctly hairy, speculum not interrupted. First funicle segment not or hardly longer than pedicel. Head and thorax dark, from green to black 120
- 120 (119) Ovipositor usually visible with sheaths bilaterally flattened. Mandibles broad and tridentate, lower teeth subequal in length, upper tooth often short and indistinct. Scutellum either flat with a distinct translucent apical flange (Fig. 60) or very convex with flange indistinct or absent. Hypopygium reaching apex of gaster *HEMENCYRTUS* (p. 202)
- Ovipositor usually hidden, but if visible then sheaths are cylindrical. Mandibles unidentate (Fig. 54) or bidentate with upper tooth long and curved, distinctly longer than the short lower tooth (Figs 55, 56). Scutellum always fairly flat and without apical translucent flange (although occasionally a flange is present but this is not translucent and is distinctly sculptured). Hypopygium not reaching apex of gaster, often quite long laterally and nearly reaching apex, but deeply incised centrally *RHYTIDOTHORAX* (p. 226)
- 121 (108) Funicle segments flattened, distinctly broadest in middle of funicle and gradually tapering towards base and apex (Fig. 66). Forewing with patch of golden setae situated in centre just below marginal vein and bordered along inner and outer margins by dark setae, basal cell completely naked. Marginal vein long and subequal in length to the long postmarginal, stigmal vein distinctly shorter than either *ANUSIOPTERA* (p. 175)
- Funicle segments subequal in width or broadening towards clava, never with segments widest in middle, forewing not as above 122
- 122 (121) Forewing with one or two hyaline fasciae, or a pair of opposite triangular hyaline spots (sometimes indistinct) distal to stigmal vein, apex of forewing infusate. Mesoscutum entire 123
- Forewing without hyaline fasciae, or triangular spots distal to stigmal vein, or, if fascia of paler setae present then notaular lines complete or at least extending half way across mesoscutum with apex of forewing hyaline 127
- 123 (122) Occipital margin rounded. Forewing with infuscation on proximal side of hyaline spots, which often appear joined, sometimes very weak. Scutellum flat with sculpture distinctly deeper than that on mesoscutum *ANABROLEPIS* (p. 172)



Figs 6-14 6, *Arrhenophagus chionaspidis* Aurivillius ♀, right antenna, outer aspect; 7, *Aphycomastix annulata* De Santis ♀, left antenna, outer aspect; 8, *Solenaphycus vianai* De Santis ♀, mesoscutum and scutellum in dorsal view; 9, *Brachyplatycerus* sp. ♀, venation of left forewing; 10, *Anarhopus sidneyensis* Timberlake ♀, left antenna, outer aspect; 11, *Stenmatosteres apterus* Timberlake ♀, mesoscutum and scutellum in dorsal view; 12, *Blanchardiscus* sp. ♂, scutellum and propodeum in dorsal view; 13, *Blanchardiscus* sp. ♂, outline of left forewing and venation; 14, *Ameromyzobia aphelinoides* Girault ♀, left antenna, outer aspect.

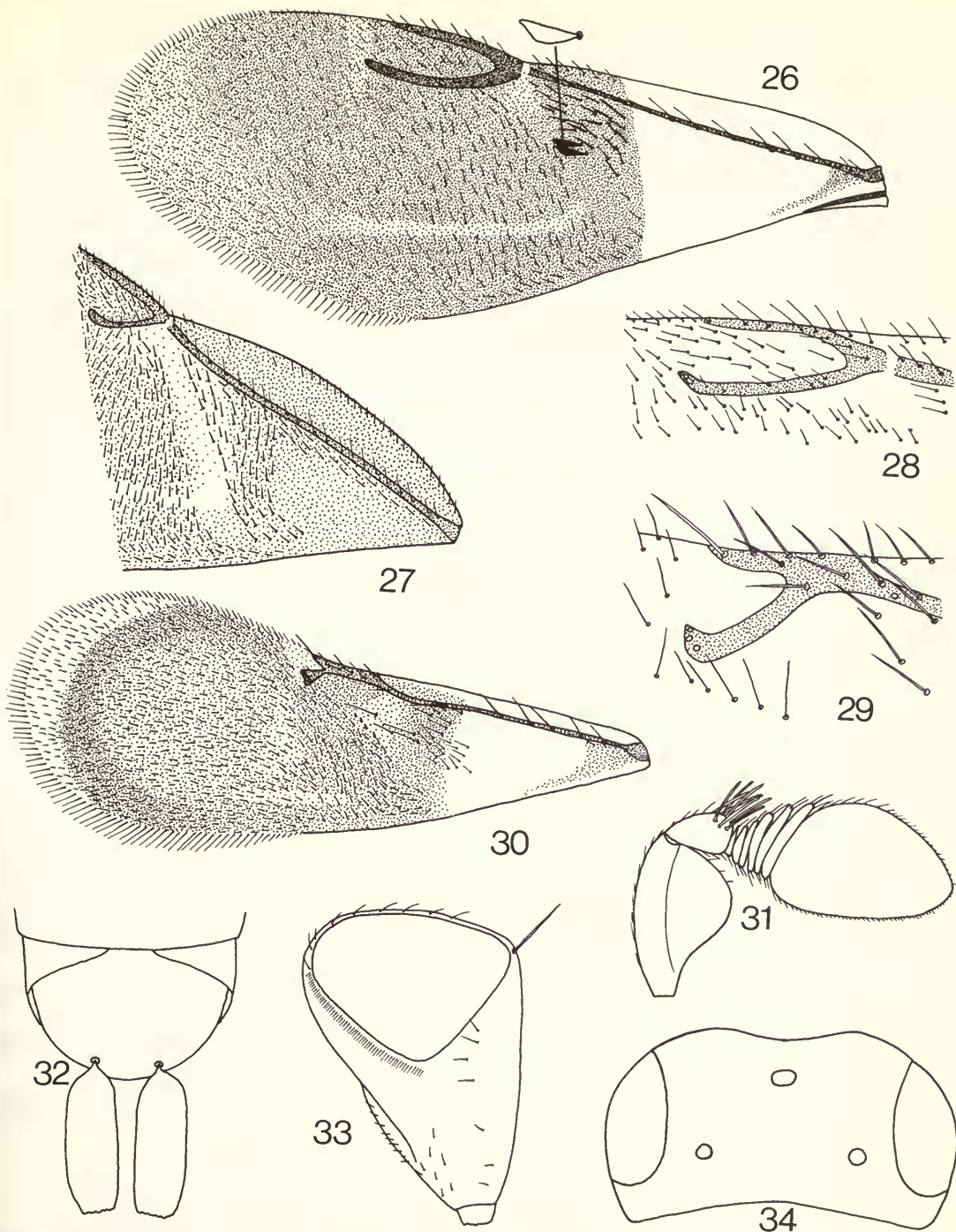
- Occipital margin acute. Forewing with infuscation on proximal side of hyaline areas strong. If sculpture on scutellum distinctly deeper than that of mesoscutum then scutellum convex 124
- 124 (122) Mid tibial spur of unusual form, very flattened and apically rounded, spatulate (Fig. 61) first two segments of funicle very short, at most half as long as the remainder which are subequal in length and breadth *DESANTISELLA* (p. 191)
- Mid tibial spur of normal form, gradually tapering with pointed apex. Antennae not as above 125
- 125 (124) Hind tibia distinctly flattened, not or hardly more than four times as long as broad (Fig. 64) *CARABUNIA* (p. 184)
- Hind tibia not or hardly flattened, at least six times as long as broad 126
- 126 (125) Forewing with two opposite, more or less triangular hyaline spots *HOPLOPSIS* (p. 204)
- Forewing with one or two hyaline fasciae, if two present then outer one often interrupted *MICROTERTYS* (p. 213)
- 127 (122) Forewing with longitudinal wedge-shaped streak, broadest at apex of wing, submarginal vein with triangular expansion in apical third (sometimes indistinct) (Fig. 57). Occipital margin more or less rounded *PARECHTHRODRYINUS* (p. 221)
- Forewing without longitudinal wedge-shaped streak, submarginal vein without triangular expansion. Occipital margin sharp 128
- 128 (127) Scutellum, mesoscutum and frontoververtex with deep thimble-punctures 129
- At most either head or dorsum of thorax with thimble-punctures 130
- 129 (128) At least first funicle segment longer than broad, funicle segments shortening towards clava, clava at most as long as combined lengths of funicle segments three to six *BOTHRIOTHORAX* (p. 182)
- All funicle segments distinctly transverse and lengthening towards clava, clava as long or longer than funicle 130
- 130 (128, 129) First funicle segment distinctly longer than broad. Clava apically rounded 131
- Either first funicle segment transverse or clava obliquely truncate 134
- 131 (130) Forewing with distinct dark fascia situated about half way along submarginal vein, remainder of forewing hyaline *ANATHRIX* (p. 174)
- Forewing without distinct dark fascia, more generally darkened or with fascia arising at marginal vein and gradually becoming paler towards wing apex 132
- 132 (131) Cerci situated in apical third of gaster. Mandibles with one tooth and a broad truncation *PRIONOMASTIX* (p. 223)
- Cerci situated in basal half of gaster. Mandibles unidentate, bidentate or tridentate 133
- 133 (132)* Ovipositor usually visible with sheaths bilaterally flattened. Mandibles broad and tridentate, lower teeth subequal in length, upper tooth often short and indistinct. Scutellum either flat with a distinct translucent apical flange (Fig. 60) or very convex with flange indistinct or absent. Hypopygium reaching apex of gaster *HEMENCYRTUS* (p. 202)
- Ovipositor usually hidden, but if visible then sheaths are cylindrical. Mandibles unidentate (Fig. 54) or bidentate with upper tooth long and curved, distinctly longer than the short lower tooth (Figs 55, 56). Scutellum always fairly flat and without apical translucent flange (although occasionally flange is present but distinctly sculptured and not translucent). Hypopygium not reaching apex of gaster, often quite long laterally and nearly reaching apex, but deeply incised medially *RHYTIDOTHORAX* (p. 226)
- 134 (130) Apex of clava rounded. Hypopygium rarely extending further than half way along gaster and never to near apex 135

* Note added while this paper was in press. *Tachinaephagus* Ashmead may run here but differs from *Rhytidothorax* in having strongly tridentate mandibles and the hypopygium reaching the apex of the gaster, and from *Hemencyrtus* in having a smooth convex scutellum with the apical flange very small, almost absent, and the eyes separated from the occipital margin by about half the diameter of an ocellus (very nearly touching occipital margin in *Hemencyrtus*).



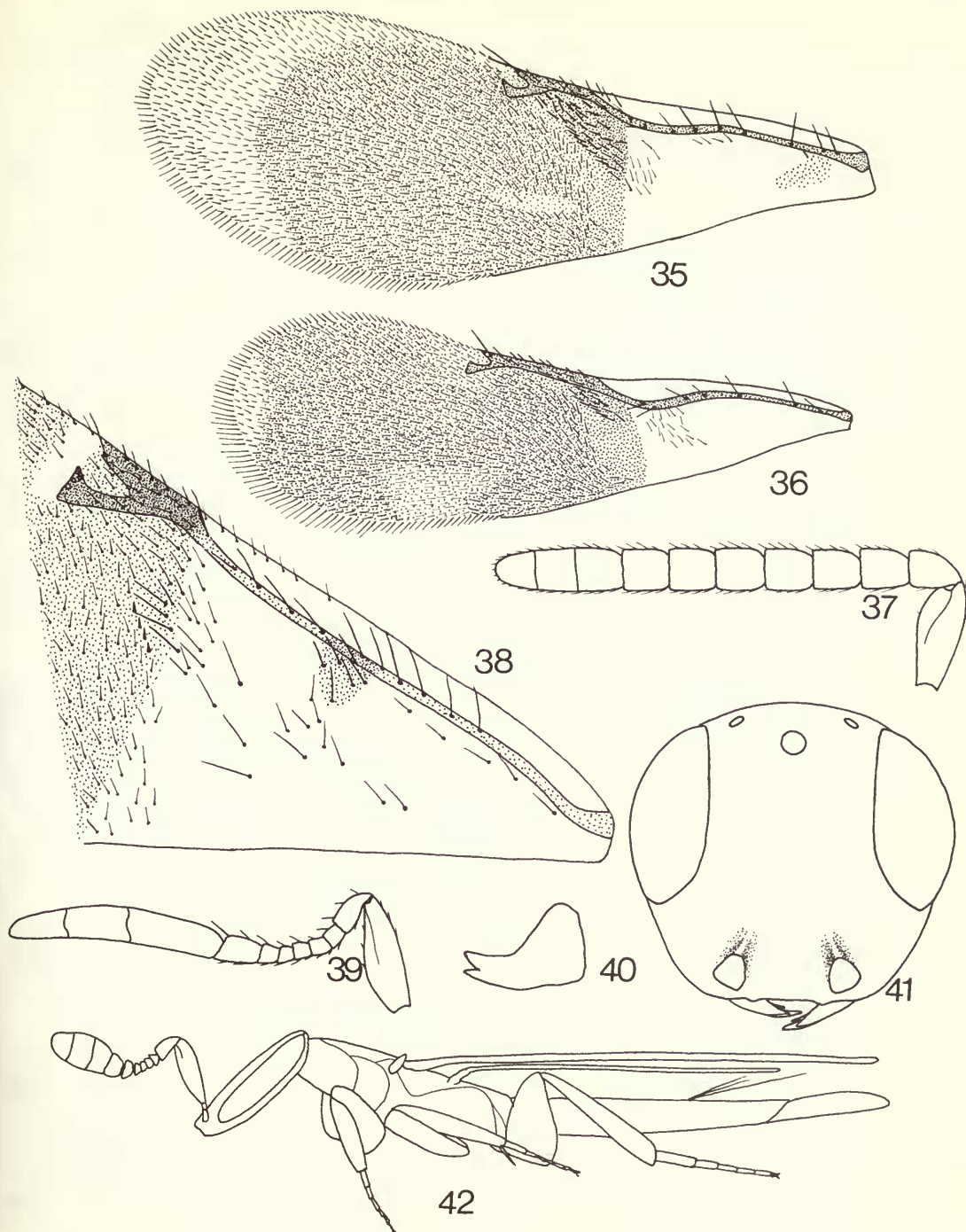
Figs 15–25 15, *Pentalitomastix plethoricus* Caltagirone ♀, left antenna, outer aspect; 16, *Tetarticlava yoshimotoi* sp. n. ♀, left antenna, outer aspect; 17, *Acroaspidea myrmicoides* Compere & Zinna ♀, left antenna, outer aspect; 18, *Neodusmetia sangwani* (Subba Rao) ♀, mesoscutum and scutellum in dorsal view; 19, *Rhopus desantisellus* Ghesquière ♀, scutellum in dorsal view; 20, *Acerophagoides* sp. ♀, base of left forewing, upper surface; 21, *Arrhenophagoidea* sp. ♀, head (slightly collapsed) viewed from left side; 22, *Ammonoencyrtus bonariensis* (Brèthes) ♀, left antenna, outer aspect; 23, *Homosemion bennetti* Annecke ♀, left antenna, outer aspect; 24, *Tetracnemoidea pretiosa* (Timberlake) ♀, base of left forewing, upper surface; 25, *Tetracnemus maculipennis* (De Santis) ♀, venation of left forewing, upper surface.

- Apex of clava obliquely truncate (Figs 50, 59, 63, 101, cf. Figs 58, 62). Hypopygium reaching or very nearly reaching apex of gaster (except in *Epiencyrtus* where clava is very distinctly obliquely truncate).
In some genera clava may appear apically rounded in dry mounted material depending on the way it has collapsed or the angle from which it is viewed, but in these genera the hypopygium very distinctly reaches apex of gaster. 137
- 135 (134) Thorax orange with contrasting dark setae dorsally. Eyes with long hairs, each longer than diameter of facet. Gaster very short, at most as long as scutellum (care!; in material that has been in alcohol the gaster may have become distended)
APHYCOMORPHA (p. 175)
- Thorax usually dark with contrasting pale setae, or, if orange then setae are pale. Eyes with numerous short inconspicuous hairs, each no longer than diameter of facet. Gaster much longer than scutellum. 136
- 136 (135) Clava and segments three to six of funicle white contrasting with the brown scape, pedicel and first two funicle segments *TYNDARICHOIDES* (p. 234)
- Clava dark or yellow, never white. *METAPHYCUS* (p. 212)
- 137 (134) Hypopygium reaching just over half way along gaster. Forewing almost hyaline, very slightly and evenly infumate *EPIENCYRTUS* (p. 195)
- Hypopygium reaching apex of gaster. Infuscation of forewing generally strong, or, if weak then not evenly distributed 138
- 138 (137) Notaular lines at least anteriorly indicated. Infuscation of forewing limited to central spot below marginal vein with occasionally middle third of wing infuscate, base and apex hyaline. Clava usually distinctly shorter than funicle 139
- Notaular lines completely absent. Infuscation of forewing usually more extensive with either base or apex darkened. Clava often longer than funicle. 141
- 139 (138) Notaular lines complete or meeting in middle (Fig. 1). Funicle segments and clava more or less subequal in width so that clava is not, or hardly, wider than first funicle segment (Fig. 50) *HOMALOTYLUS* (p. 203)
- Notaular lines incomplete and never meeting in middle, at most extending two-thirds across mesoscutum. Funicle segments distinctly broadening apically so that clava is at least one and a half times as wide as first funicle segment (Figs 58, 63) 140
- 140 (139) First funicle segment very short, less than half as long as second (Fig. 63). Notaular lines anteriorly indicated only. Mid tibial spur very long and slightly longer than mid basitarsus. Mesoscutum and scutellum completely orange *BRETHESIELLA* (p. 183)
- First funicle segment at least three-quarters as long as second (as in Fig. 58). Notaular lines reaching half way across mesoscutum. Mid tibial spur at most as long as basitarsus. Mesoscutum and scutellum usually with dark areas *ISODROMUS* (p. 206)
- 141 (138) Mesoscutum relatively short, at most slightly more than half as long as scutellum. Frontovortex at narrowest point about two-thirds of head width or more *CHALCASPIIS* (p. 184)
- Mesoscutum longer, at least about two-thirds as long as scutellum. Frontovortex narrower, at narrowest point at most two-fifths head width 142
- 142 (141) Frontovortex narrower, at narrowest point at most one-sixth head width *EURYRHOPALUS* (p. 196)
- Frontovortex broader, at narrowest point more than one-fifth head width 143
- 143 (142) Postmarginal vein distinctly longer, at least one and a half times as long as stigmal, forewing most strongly infumate towards apex *BLEPYRUS* (p. 182)
- Postmarginal vein shorter, not longer than stigmal, forewing most strongly infumate towards base 144
- 144 (143) Clava as long or longer than funicle and usually much wider than funicle, antennae club-shaped (as in Fig. 62), all funicle segments transverse. Forewing: costal cell with two or three lines of setae dorsally *AENASIUS* (p. 170)



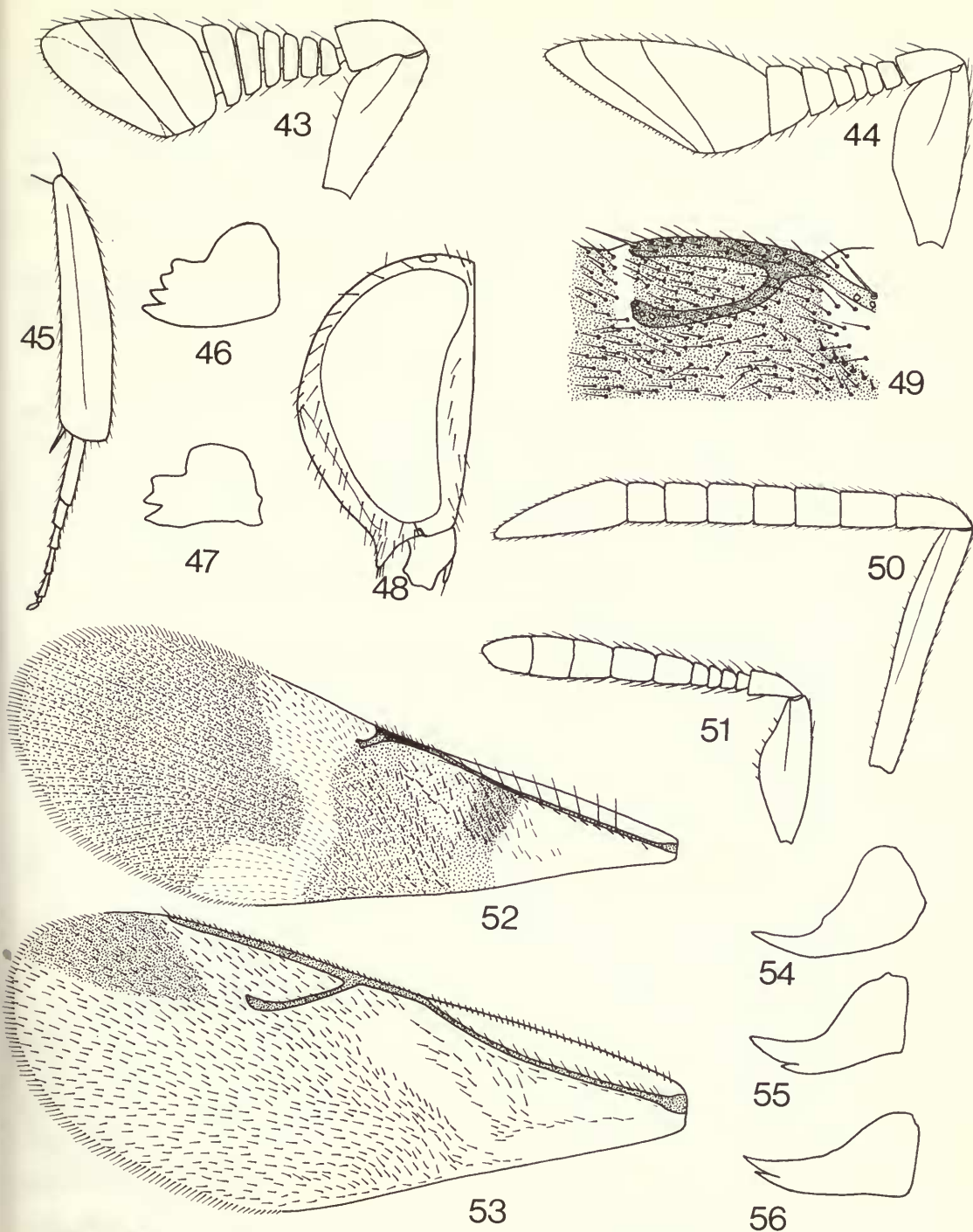
Figs 26–34 26, *Chrysoplatycerus splendens* (Howard) ♀, left forewing, upper surface; 27, *Zaplatycercus fullawayi* Timberlake ♀, base of left forewing, upper surface; 28, *Zarphopalus putophilus* Bennett ♀, venation of left forewing, upper surface; 29, *Hambletonia pseudococcina* Compere ♀, venation of left forewing, upper surface; 30, *Anicetus annulatus* Timberlake ♀, left forewing, upper surface; 31, *Hambletonia pseudococcina* Compere ♀, right antenna, outer aspect; 32, *Habrolepis dalmanni* (Westwood) ♀, scutellum in dorsal view, showing apical lamelliform setae; 33, *Anabrolepis zetterstedtii* (Westwood) ♀, head viewed from left side; 34, *Hunterellus hookeri* Howard ♀, head in dorsal view.

- Clava about half as long as funicle and not much wider than funicle, antenna not club-shaped, at least some funicle segments longer than broad or quadrate (Fig. 59).
Forewing: costal cell dorsally with at most a few setae at its apex **HEMAENASIUS** (p. 202)
- 145 (92) All funicle segments longer than broad 146
- Not all funicle segments longer than broad. 177
- 146 (145) Head more or less purplish brown with area below level of dorsal part of antennal scrobes shiny, metallic green with shallow shiny bottomed thimble-punctures. Frontoververtex with five pale yellow areas: two circular ones about midway between anterior ocellus and antennal toruli on either side of frontoververtex and touching eye margins, and three elongate spots on same level just above toruli and interantennal prominence all more or less joined to form a continuous transverse line (Fig. 67) **PLATYLYCA** (p. 222)
- Head not as above 147
- 147 (146) Exserted part of ovipositor at least as long as one-quarter length of gaster. 148
- Exserted part of ovipositor at most as long as one-fifth length of gaster 156
- 148 (147) Forewing narrow, more than three times as long as broad. Costal cell about as wide as diameter of submarginal vein (Fig. 70). Mandibles long, narrow and bidentate (as in Fig. 40) **ANAGYRUS** (p. 173)
- Forewing less than three times as long as broad, costal cell at least twice as broad as diameter of submarginal vein. Mandibles usually tridentate, or, if bidentate then relatively broad 149
- 149 (148) Postmarginal vein much longer than stigmal, speculum interrupted in lower half by two or three lines of setae on dorsal surface of wing (Fig. 68) 150
- Postmarginal vein not longer than stigmal, or, if slightly longer then speculum not interrupted 151
- 150 (149) Exserted part of ovipositor much longer than gaster and with sheaths cylindrical. Eyes with moderately long dark setae **DELOENCYRTUS** (p. 191)
- Exserted part of ovipositor shorter than gaster and with sheaths slightly flattened. Eyes more or less naked **NEAPSILOPHRYS** (p. 215)
- 151 (149) Ovipositor sheaths bilaterally flattened, together at least twice as deep (at deepest point of exserted part) as broad (at apex of gaster) 152
- Ovipositor sheaths cylindrical, or, if slightly flattened then together less than twice as deep (at deepest point of exserted part) as broad (at apex of gaster) 154
- 152 (151) Mandibles bidentate **ASEIRBA** (p. 179)
- Mandibles tridentate 153
- 153 (152) Hypopygium reaching apex of gaster. Scutellum flat with an apical translucent flange (Fig. 60) or very convex. Occipital margin sharp **HEMENCYRTUS** (p. 202)
- Hypopygium extending about half way along gaster. Scutellum quite flat but without apical translucent flange. Occipital margin not sharp. **CERCHYSIUS** (p. 184)
- 154 (151) Occipital margin not sharp. Hypopygium reaching about half way along gaster **CERCHYSIUS** (p. 184)
- Occipital margin sharp. Hypopygium longer, reaching more or less to apex of gaster 155
- 155 (154) Marginal vein punctiform (Fig. 69). Sculpture of scutellum often deep but never in distinct whorls. Setae on mesoscutum dark. Axillae usually hardly raised above level of scutellum and with posterior margin distinctly sculptured, very rarely as below **COPIDOSOMA** (p. 189)
- Marginal vein at least about twice as long as broad (Fig. 65). Sculpture of scutellum usually longitudinally striate-reticulate, more or less forming distinct whorls. Mesoscutum usually with conspicuous white setae. Axillae step-like and distinctly raised above level of scutellum with posterior margin almost vertical and very polished **APSILOPHRYS** (p. 176)



Figs 35–42 35, *Prochiloneurus dactylopii* (Howard) ♀, left forewing, upper surface; 36, *Cheiloneurus* sp. ♀, left forewing, upper surface; 37, *Gahaniella tertia* Kerrich ♀, left antenna, outer aspect; 38, *Iceromyia flavifrons* sp. n. ♀, base of left forewing, upper surface; 39, *Coccidencyrus* sp. ♀, left antenna, outer aspect; 40, *Anagyrus insolitus* (Howard) ♀, left mandible; 41, *Shenahetia masneri* sp. n. ♀, head in frontal aspect; 42, *Mariola flava* sp. n. ♀, whole insect viewed from left side.

- 156 (147) Forewing: speculum interrupted by 2 or 3 lines of setae in lower half, or completely closed at this point by at least 6 or 7 lines of setae, basal cell completely pilose dorsally with setae as dense or nearly as dense as in centre of wing (as in Figs 70, 71). 157
- Forewing: speculum not interrupted or interrupted only by one line of setae, or sometimes closed near hind margin of wing by two or three lines of setae, or, if speculum interrupted then at least proximal one-third of basal cell naked dorsally and setae are noticeably less dense than in centre of wing 160
- 157 (156) Postmarginal vein distinctly longer than stigmal, dorsum of thorax usually orange (rarely black) with conspicuous dark setae on mesoscutum. Pedicel and flagellum often concolorous, black *LEPTOMASTIX* (p. 206)
- Postmarginal vein not longer than stigmal (Figs 70, 71). Dorsum of thorax dark or occasionally orange, but always with pale setae on mesoscutum. Pedicel and flagellum not unicolorous, at least apex of pedicel white, or clava yellowish 158
- 158 (157) Postmarginal vein very short or absent (as in Figs 70, 71). Sculpture of scutellum more or less same as that on mesoscutum *ANAGYRUS* (p. 173)
- Postmarginal vein as long, or nearly as long, as stigmal. Sculpture of scutellum deeper and coarser than that on mesoscutum 159
- 159 (158) Scape distinctly broadest at middle. Scutellum with deep, dense punctiform sculpture. Head in side view with posterior margin of eye adjacent to occipital margin for over half its length. Funicle and whole of pedicel black, clava white *ANATHRIX* (p. 174)
- Scape broadest just above middle or parallel-sided. Scutellum with slightly elongate sculpture. Head in side view with posterior margin of eye diverging from occipital margin at much less than half its length. At least one funicle segment or apex of pedicel paler than rest of flagellum *APOANAGYRUS* (p. 176)
- 160 (156) Apex of scutellum with a tuft of longer setae, or, if tuft indistinct then at least posterior third of mesoscutum clothed in dense white setae which contrast strongly with dark colour of mesoscutum. Scutellum with deep sculpture and not shiny. Submarginal vein usually slightly expanded in apical third *ZAOMMA* (p. 235)
- Apex of scutellum without tuft of setae, at most with a few upright setae. Mesoscutum not with contrasting pale setae, or, if with some pale setae then posterior third of scutellum shiny. Submarginal vein usually not expanded in apical third 161
- 161 (160) Apical third of submarginal vein with triangular expansion (Fig. 57) (sometimes indistinct but usually indicated by a single long seta) *PARECHTHRODRYINUS* (p. 221)
- Submarginal vein without triangular expansion 162
- 162 (161) Scutellum very convex and with numerous distinct short ridges running backwards from axillae (Fig. 74) *LIRENCYRTUS* (p. 207)
- Scutellum without numerous short ridges at base 163
- 163 (162) Eyes distinctly hairy, occasionally hairs pale and inconspicuous but always as long as the diameter of facet. Propodeum medially at least one-fifth as long as scutellum and usually with sculpture centrally which contrasts with the smoother lateral areas (Fig. 60, cf. Fig. 121). Marginal vein at least about three times as long as broad; occipital margin sharp 164
- Eyes not hairy, or, if slightly hairy the following characters are all present: hairs on eyes pale and inconspicuous and not longer than a facet, and occipital margin not sharp, and marginal vein less than twice as long as broad. Propodeum medially usually less than one-sixth as long as scutellum and without sculpture centrally (except in *Helegonatopus* and *Mucrencyrtus* where the eyes are completely naked) 165
- 164 (163) Ovipositor usually visible with sheaths bilaterally flattened. Mandibles broad and tridentate, lower teeth subequal in length, upper tooth often short and indistinct. Scutellum either flat with distinct translucent apical flange (Fig. 60) or very convex with flange indistinct or absent. Hypopygium reaching apex of gaster *HEMENCYRTUS* (p. 202)
- Ovipositor usually hidden, but if visible then sheaths are cylindrical. Mandibles unidentate (Fig. 54) or bidentate with upper tooth long and curved (Figs 55, 56),

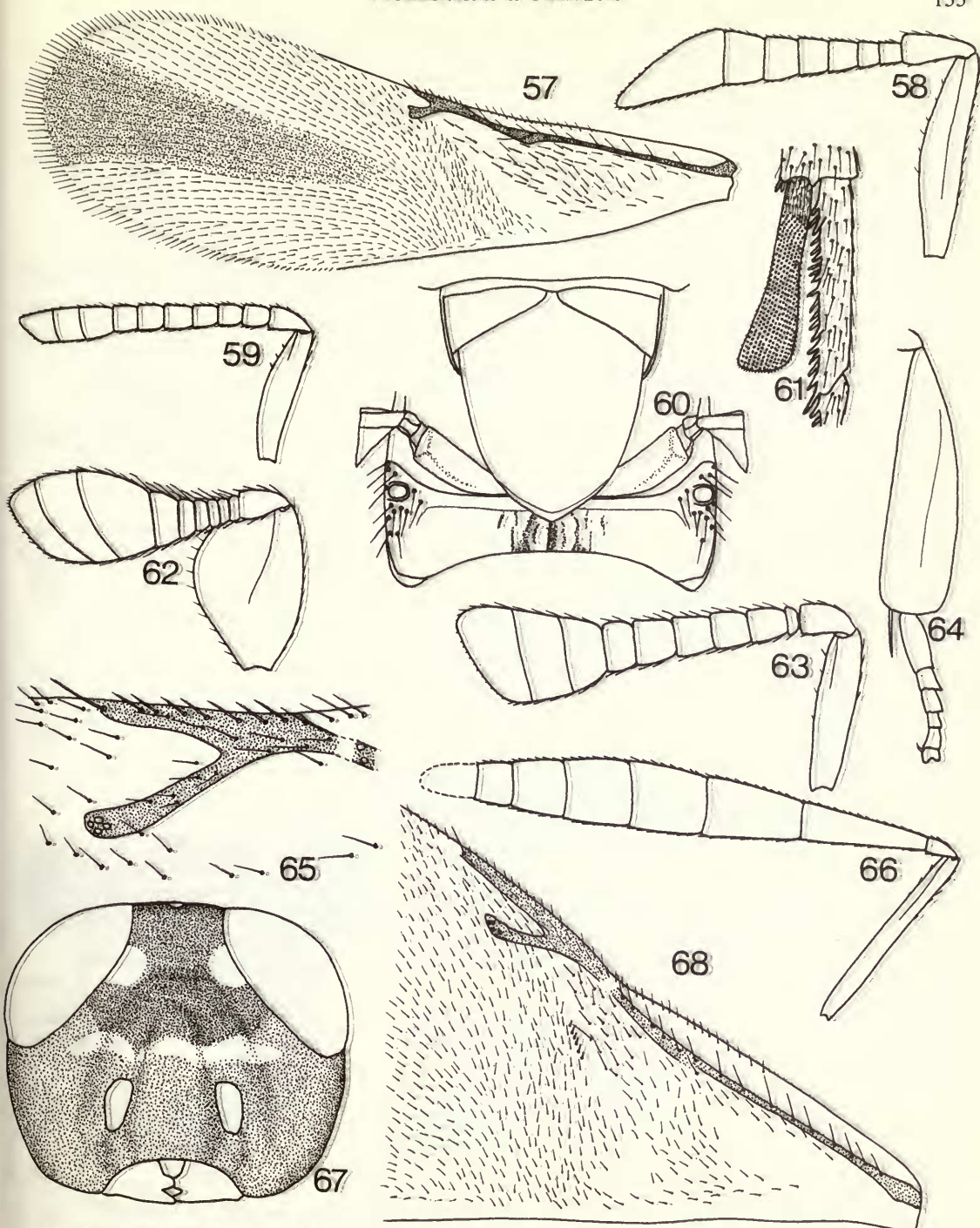


Figs 43–56 43, *Bennettisca flavigena* sp. n. ♀, left antenna, outer aspect; 44, *Iceromyia flavifrons* sp. n. ♀, left antenna, outer aspect; 45, *Moorella fulviceps* Cameron ♀, left hind tibia and tarsus, outer aspect; 46, *Adelencyrtus moderatus* (Howard) ♀, left mandible; 47, *Coccidencyrus* sp. ♀, left mandible; 48, *Parablastothrix* sp. ♀, head viewed from left side; 49, *Encyrtus lecaniorum* (Mayr) ♀, left forewing venation, upper surface; 50, *Homalotylus terminalis* (Say) ♀, left antenna, outer aspect; 51, *Hemaenasius* sp. ♀, left antenna, outer aspect; 52, *Neococcidencyrus* sp. ♀, left forewing, upper surface; 53, *Ericydus lamasi* (Domenichini) ♀, left forewing, upper surface; 54–56, *Rhytidothorax* spp., left mandibles.

distinctly longer than lower tooth. Scutellum always fairly flat and without apical translucent flange (although occasionally a flange is present, but distinctly sculptured and not translucent). Hypopygium not reaching apex of gaster, often quite long laterally and nearly reaching apex, but deeply incised medially

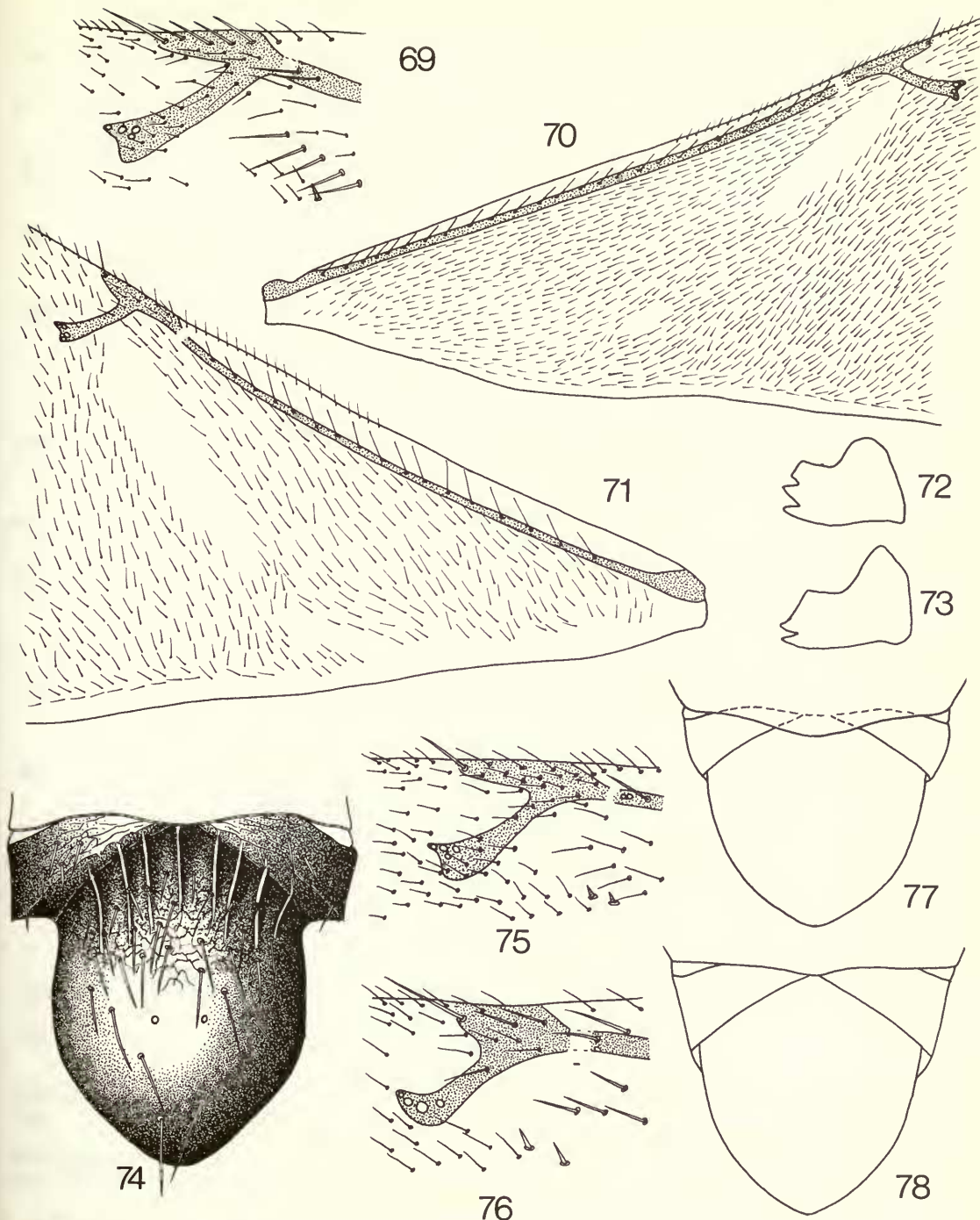
RHYTIDOTHORAX (p. 226)

- 165 (163) Flagellum bicolorous: funicle brown, clava white or yellow. Mandibles with two teeth and a truncation. *LOHIELLA* (p. 209)
- Flagellum unicolorous, or if as above, then mandibles are bidentate 166
- 166 (165) Scape relatively short, not longer than malar space. Antennal toruli high on head, more than twice the length of each torulus from mouth margin. All funicle segments about as long and as wide as pedicel (as in Fig. 37).
Mandibles without teeth or with one tooth and a truncation *GAHANIELLA* (p. 197)
- Scape distinctly longer than malar space or antennal torulus less than twice its own length from mouth margin. First funicle segment distinctly shorter than pedicel, at most three-quarters as long and distinctly less in diameter 167
- 167 (166) Clava at least three-quarters as long as funicle. Legs completely yellowish white. *[Coccidencyrtus malloi Blanchard]* (p. 188)
- Clava at most two-thirds as long as funicle. Legs orange or at least partially darkened 168
- 168 (167) Mandibles with one or two teeth and a truncation (Figs 72, 73). Hypopygium at most reaching just over half way along gaster. Clava apically round or with a short oblique truncation 169
- Mandibles with three acute teeth (Fig. 97), or, if third (upper) tooth developed but truncate, then hypopygium reaches or nearly reaches apex of gaster and apex of clava is transversely truncate 172
- 169 (168) Either marginal vein more or less punctiform (at most about one and a half times as long as broad) or postmarginal absent or nearly absent (Figs 75, 76, 81). Mesoscutum often bright metallic green 170
- Marginal vein at least twice as long as broad, postmarginal distinct, usually as long or nearly as long as radial (Fig. 79). Mesoscutum rarely green 172
- 170 (169) Head lenticular, in side view more than twice as long as deep (Fig. 82) and in dorsal view over two and a half times as wide as deep (Fig. 83). Antennal scrobes very shallow and indistinct. *SIMMONDSIELLA* (p. 229)
- Head of more normal proportions, in side view less than twice as long as deep and in dorsal view less than twice as wide as deep. Antennal scrobes moderately to deeply impressed 171
- 171 (170) Posterior margin of mesoscutum gently curved or with either side straight and centrally slightly angled so that axillae appear to meet centrally and not greatly separated by posterior margin of mesoscutum (Fig. 78). Setae on antenna very short, the longest less than half the diameter of the first funicle segment. Stigmal vein distinctly longer than marginal, postmarginal distinct and only slightly shorter than marginal (Fig. 75). Frontovertex at narrowest point usually at least one-third head width. Parasites of psyllid nymphs. *PSYLLAEPHAGUS* (p. 226)
- Posterior margin of mesoscutum produced backwards in middle third so that axillae appear to be widely separated (Fig. 77). Setae of antennae longer, the longest about as long or longer than the diameter of the first funicle segment. Stigmal vein rarely longer than marginal, postmarginal usually not distinct or at most not as long as marginal (Fig. 76). Frontovertex generally less than one-fifth head width; rarely a great deal wider. *OOENCYRTUS* (p. 217)
- 172 (168, 169) Marginal vein punctiform and at most half as long as stigmal (Figs 85, 90, 109; also as in 69). Hypopygium extending to at least five-sixths along gaster 173
- Marginal vein distinctly longer than broad, at least slightly more than half as long as stigmal (Fig. 79). Hypopygium extending to at most three-quarters along gaster 175
- 173 (172) Hypopygium with apex rounded; not produced as narrow projecting tongue. Head and thorax metallic *COPIDOSOMA* (p. 189)



Figs. 57–68: 57, *Parechthrodryinus nitidus* (Howard) ♀, left forewing, upper surface; 58, *Isodromus iceryae* Howard ♀, left antenna, outer aspect; 59, *Hemaenasius confusus* Ashmead ♀, left antenna, outer aspect; 60, *Hemencyrtus* sp. ♀, scutellum and propodeum, dorsal view; 61, *Desantisella trifasciata* De Santis ♀, mid tibial spur; 62, *Aenasius phenacocci* Bennett ♀, left antenna, outer aspect; 63, *Brethesiella* sp. ♀, left antenna, outer aspect; 64, *Carabunia myersi* Waterston ♀, left hind tibia and tarsus, outer aspect; 65, *Apsilophrys* sp. ♀, left forewing venation, upper surface; 66, *Anusioptera aureocincta* Brues ♀, left antenna, outer aspect (clava missing); 67, *Platyllyca quadraticeps* De Santis ♀, head in frontal aspect; 68, *Neapsilophrys flavipes* sp. n. ♀, left forewing base, upper surface.

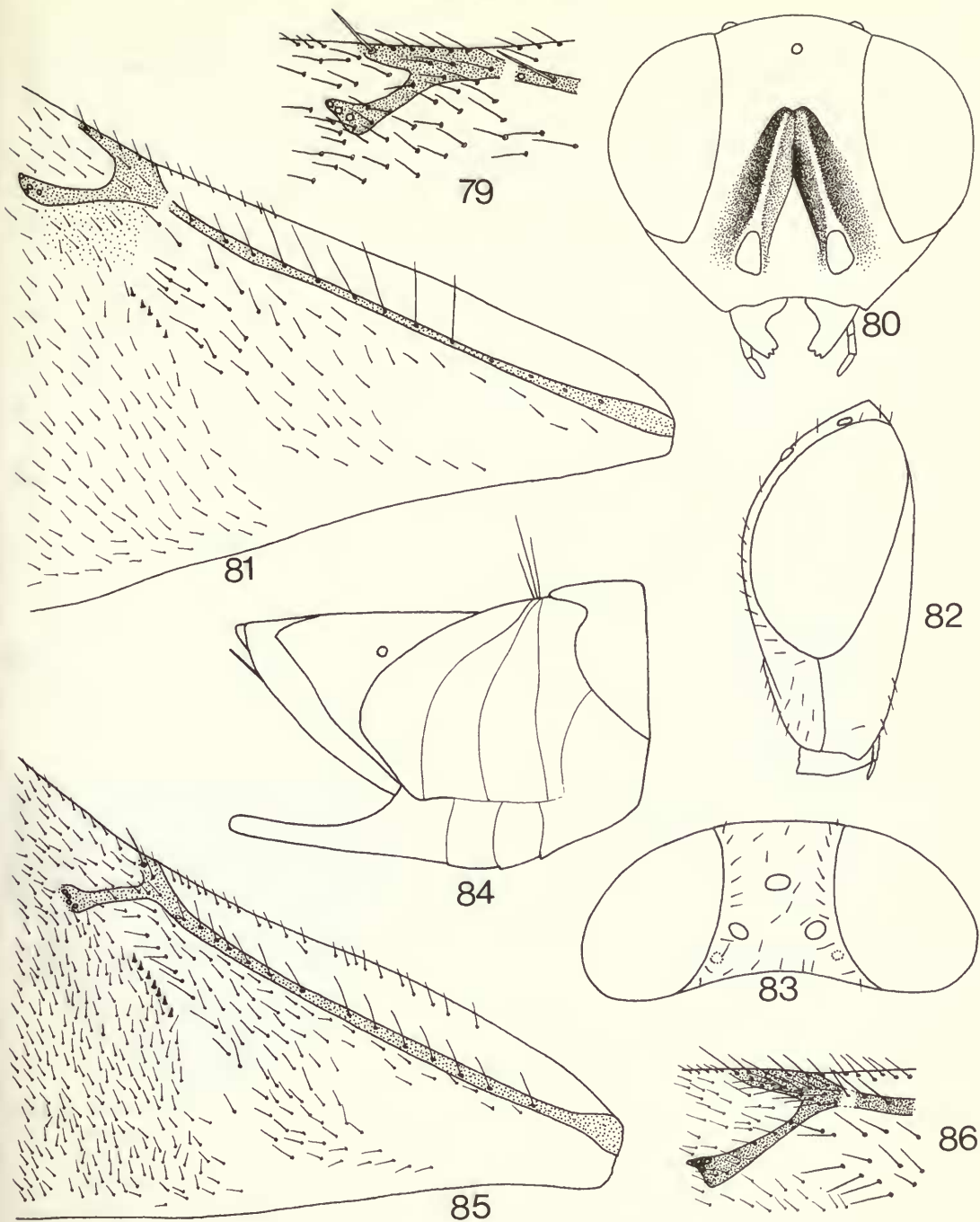
- Hypopygium apically produced into narrow projecting tongue which may be almost as long as half length of gaster (Fig. 84). Head and thorax orange 174
- 174 (173) Forewing: setae on dorsal surface of costal cell limited to line from about half way along to apex of cell near wing margin, basal cell distinctly less pilose than centre of wing (Fig. 85). Antennal scrobes not deep or well defined and with interantennal prominence dorsally more or less rounded. *PARAMUCRONA* (p. 219)
- Forewing: setae on dorsal surface of costal cell rather dense, particularly in distal half, not limited to a single line near wing margin, basal cell about as densely pilose as centre of wing (Fig. 90). Antennal scrobes quite deep and well defined and with interantennal prominence dorsally produced as a long, very acute ridge (Fig. 80) *MUCRENCYRTUS* (p. 213)
- 175 (172) Scutellum longitudinally striate with silky lustre *MERCETENCYRTUS* (p. 211)
- Scutellum not longitudinally striate and without silky lustre 176
- 176 (175) Basal two-thirds or three-quarters of scutellum with raised very rough sculpture which contrasts very strongly with the highly polished apex. Centre of propodeum with distinct sculpture. Venation of forewing yellowish or testaceous. Apex of clava rounded *HELEGONATOPUS* (p. 200)
- Scutellum more or less evenly sculptured, never with sculpture at base contrasting so strongly with that at apex. Centre of propodeum smooth. Venation of forewing usually dark brown. Clava apically with at least a short oblique truncation *SYRPHOPHAGUS* (p. 230)
- 177 (145) First funicle segment longer than broad 178
- First funicle segment not longer than broad 207
- 178 (177) Exserted part of ovipositor with sheaths distinctly flattened, together more than twice as deep as broad at apex of gaster. Mesoscutum not with distinct thimble-punctured sculpture and scutellum never smooth and shiny 179
- Ovipositor not exserted, or, if exserted then sheaths more or less cylindrical, or, if slightly flattened (*Zeteticontus*) then mesoscutum has deep thimble-punctured sculpture or scutellum is smooth and shiny 181
- 179 (178) Eyes relatively small, frontovertex at narrowest point about half head width, malar space about two-thirds length of eye. Posterior ocellus separated from eye margin by at least its own diameter. Postmarginal vein very short, about one-third length of marginal which is shorter than stigmal. Exserted part of ovipositor longer than gaster. Mandible with two strong teeth. *GONZALEZIA* (p. 197)
- Eyes larger, frontovertex at narrowest less than half head width, malar space at most one-third as long as an eye. Posterior ocellus separated from eye margin by less than its own diameter. Postmarginal vein nearly as long or longer than stigmal. Exserted part of ovipositor much shorter than gaster, often only just visible. Mandible with at least a very short third (upper) tooth 180
- 180 (179) Hypopygium reaching apex of gaster *HEMENCYRTUS* (p. 202)
- Hypopygium reaching to about half way along gaster. *Encyrtus conformis* Howard (p. 195)
- 181 (179) Frontovertex or mesoscutum with conspicuous deep thimble-punctures usually separated by at most their own diameters 182
- Sculpture not as above, generally reticulate and shallow, occasionally with distinct piliferous punctures but these are small and separated by much more than their own diameters 186
- 182 (181) Scutellum very smooth and shiny, devoid of sculpture except occasionally in basal half, at least apical third very polished (occasionally basal two-thirds has thimble-punctured sculpture, but spaces between punctures are polished) *ZETETICONTUS* (p. 236)
- All of scutellum distinctly sculptured 183
- 183 (182) Marginal vein punctiform or absent (Figs 86, 87) 184
- Marginal vein at least twice as long as broad 185



Figs 69–78 69, *Copidosoma virescens* De Santis ♀, left forewing venation, upper surface; 70, *Anagyrus bellator* (De Santis) ♀, right forewing base, upper surface; 71, *Anagyrus* sp. ♀, left forewing base, upper surface; 72, *Psyllaephagus trellesi* (Blanchard) ♀, left mandible; 73, *Psyllaephagus rotundiformis* (Howard) ♀, left mandible; 74, *Lirencyrtus primus* sp. n. ♀, scutellum, dorsal aspect; 75, *Psyllaephagus rotundiformis* (Howard) ♀, left forewing venation, upper surface; 76, 77, *Ooencyrtus trinidadensis* Crawford ♀, (76) left forewing venation, upper aspect, (77) scutellum, dorsal aspect; 78, *Psyllaephagus rotundiformis* (Howard) ♀, scutellum, dorsal aspect.

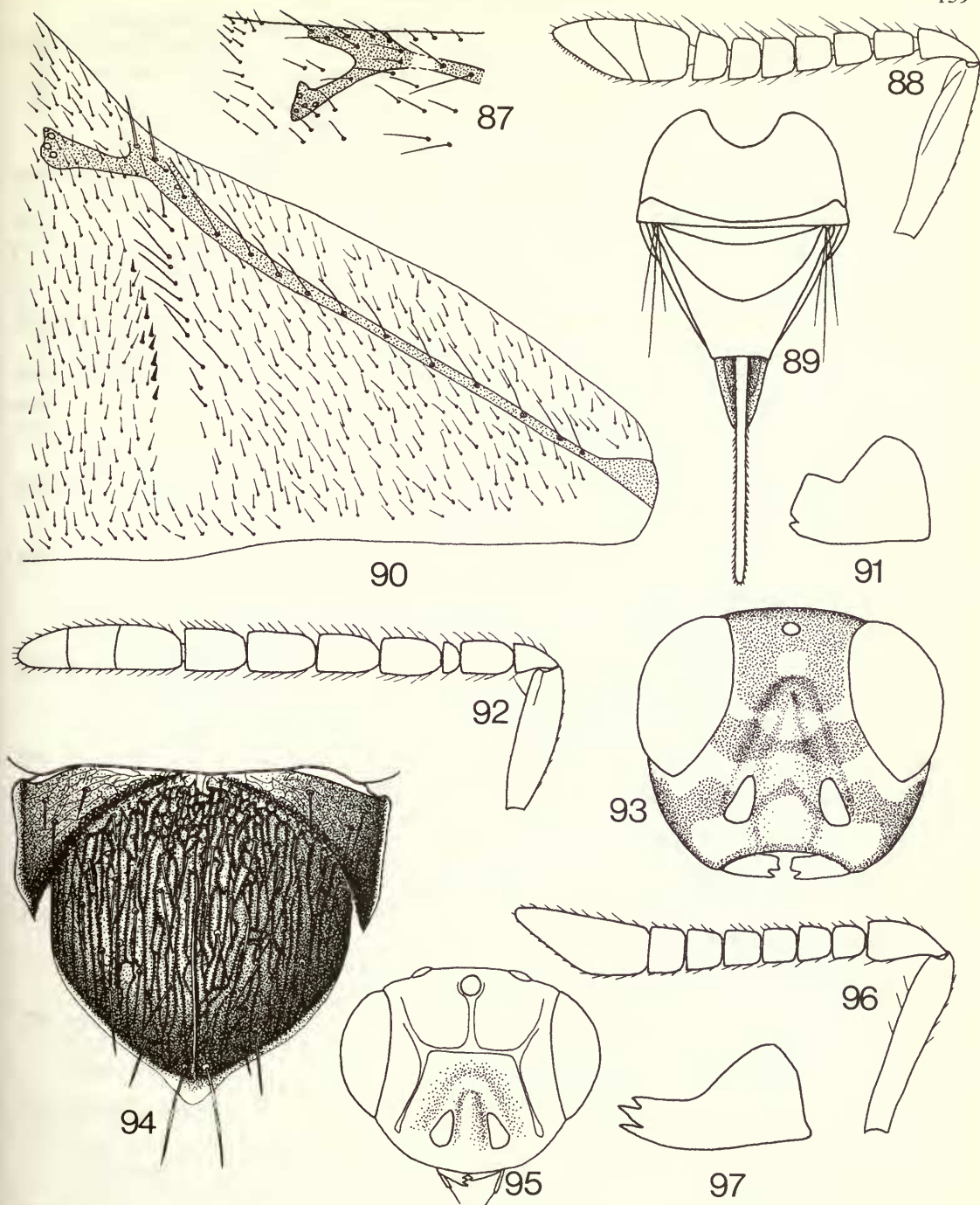
- 184 (183) Marginal vein more or less absent, stigmal vein usually arising before submarginal reaches wing margin (Fig. 86). Frontoververtex with shiny bottomed piliferous punctures. Mandibles with two teeth and a truncation **LOCHITOENCYRTUS** (p. 209)
- Marginal vein present, punctiform (as in Fig. 87). Piliferous punctures on frontoververtex not shiny bottomed. Mandibles with three acute teeth **BOTHRIOTHORAX** (p. 182)
- 185 (183)* Clava apically rounded. Punctures on frontoververtex not shiny bottomed. Mandibles with three acute teeth **HEMENCYRTUS** (p. 202)
- Clava obliquely truncate (Fig. 88). Punctures on frontoververtex shiny bottomed. Mandibles with two teeth and a truncation or with a rudimentary third (upper) tooth **HELMECEPHALA** (p. 200)
- 186 (181) Hypopygium clearly extending past apex of epipygium (Fig. 89). Postmarginal vein longer than stigmal. Exserted part of ovipositor at least half as long as gaster **COCCIDOCTONUS** (p. 188)
- Hypopygium clearly not extending past apex of epipygium. Postmarginal vein not longer than stigmal, or, if so then ovipositor is more or less hidden or only slightly exserted 187
- 187 (186) All funicle segments longer than broad, except the second which is anelliform (Fig. 92) **CYDERIUS** (p. 190)
- Funicle not as above 188
- 188 (187) Propodeum medially at least one-sixth as long as scutellum and with some sculpture centrally (Fig. 60) 189
- Propodeum medially at most one-seventh as long as scutellum and more or less smooth centrally 194
- 189 (188) Eyes and frontoververtex with long conspicuous setae. Hypopygium reaching apex of gaster. Mandibles tridentate. Apex of scutellum with translucent flange (Fig. 60) (occasionally if scutellum is very convex flange may be indistinct or absent). Body dark and shiny **HEMENCYRTUS** (p. 202)
- Eyes and frontoververtex without conspicuous long setae, or, if present then mandibles unidentate or bidentate and hypopygium does not reach apex of gaster. Apex of scutellum never with a translucent flange, or, if flange present then body completely orange and not shiny 190
- 190 (189) Scutellum very convex with very deep, rough, elongate sculpture, apex with a small, thin, more or less triangular, foliate extension (Fig. 94). Clava obliquely truncate (Fig. 106) **AMAURILYMA** (p. 171)
- Scutellum rather flat, occasionally with deep elongate sculpture, but never rough and without apical extension. Clava apically rounded or transversely truncate 191
- 191 (190) Mandibles unidentate (Fig. 52) or bidentate (Figs 55, 56). Eyes with conspicuous long hairs. Apical margin of scutellum usually with an inconspicuous carina (as in Fig. 121) **RHYTIDOTHORAX** (p. 226)
- Mandibles tridentate. Eyes without conspicuous hairs, at most with a few short pale ones. Apical margin of scutellum without carina, often quite smooth 192
- 192 (191) Head and thorax mostly metallic green or greenish blue. Gaster longer than thorax **PARECHTHRODRYINUS** (p. 221)
- Head or thorax largely orange. Gaster shorter than thorax. 193
- 193 (192) Head black. Clava apically truncate (Fig. 200) **PROTYNDARICHOIDES** (p. 224)
- Head orange. Clava apically rounded (Fig. 189) **MUCRENCYRTUS** (p. 213)
- 194 (188) Thorax and head mostly orange and yellow, never metallic. **Metaphycus ceroplastae** (Dozier) (p. 212)
- At least thorax, excluding legs, dark brown or green and metallic or shiny. 195

* Note added while this paper was in press. *Tachinaephagus* Ashmead may run here, but differs from *Hemencyrtus* in having a smooth convex scutellum with the apical flange very small, almost absent, and the eyes separated from the occipital margin by about half the diameter of an ocellus (very nearly reaching the occipital margin in *Hemencyrtus*).



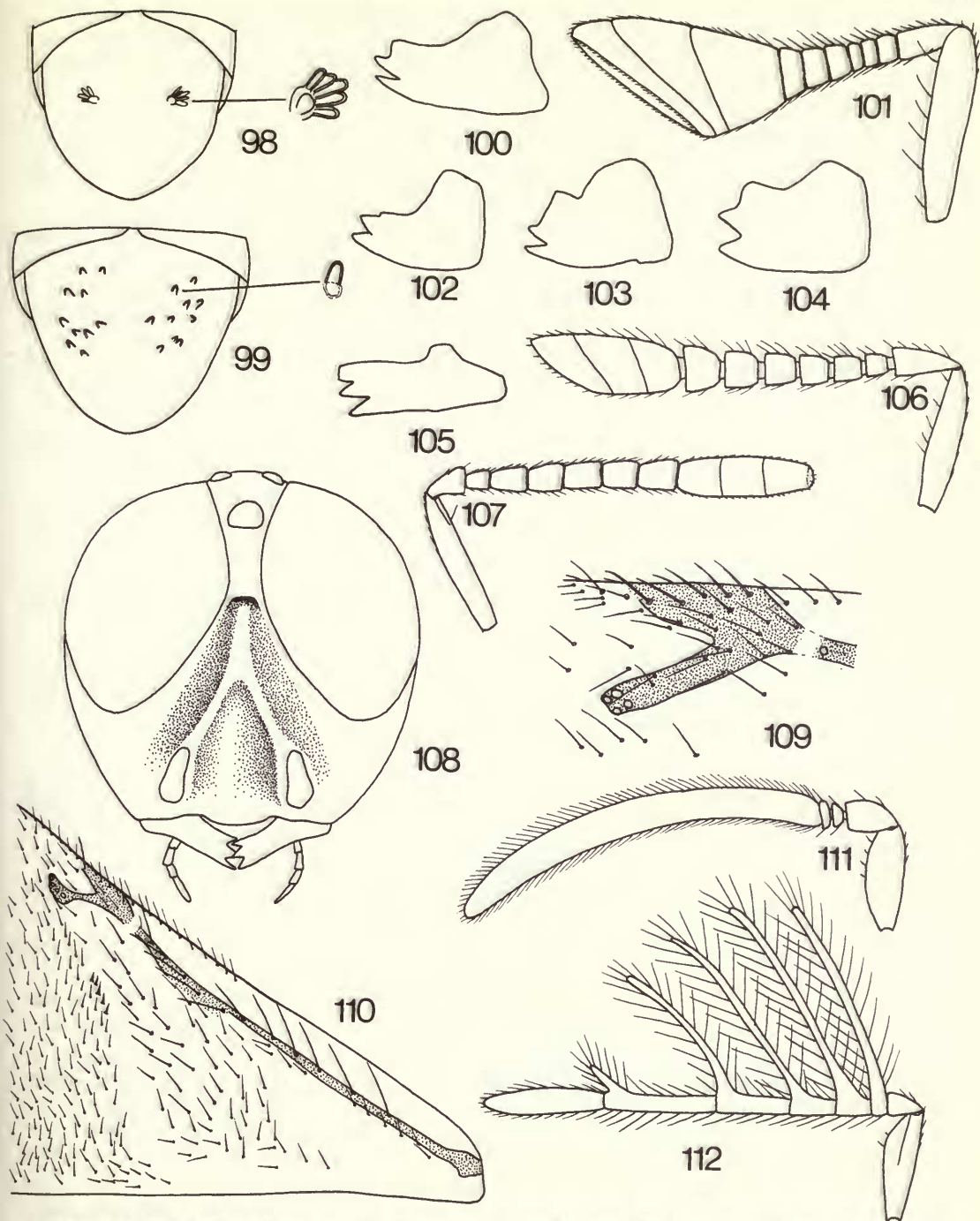
Figs 79–86 79, *Syrphophagus* sp. ♀, left forewing venation, upper surface; 80, *Mucrencyrtus insulanus* sp. n. ♀, head in frontal aspect; 81–83, *Simmondsiella flaviptera* sp. n., ♀, (81) left forewing base, upper surface, (82) head viewed from left side, (83) head, dorsal view; 84, *Mucrencyrtus insulanus* sp. n. ♀, gaster viewed from right side; 85, *Paramucrona brasiliensis* sp. n. ♀, left forewing base, upper dorsal view; 86, *Mucrencyrtus insulanus* sp. n. ♂, left forewing base, upper surface; 91,

- 195 (194) Head not unicolorous, mostly dark brown with white or pale yellow areas on lower part of face, particularly around antennal scrobes and on interantennal prominence (Fig. 93) **TACHARDIOBIUS** (p. 231)
- Head unicolorous without yellow or white markings 196
- 196 (195) Scape short, not longer than malar space, all funicle segments and pedicel subquadrate and subequal in length and breadth, not distinctly widening towards apex of antenna, clava about as wide as first funicle of segment (as in Fig. 37)
Mandibles without teeth or with one tooth and a broad truncation **GAHANIELLA** (p. 197)
- Scape longer, longer than malar space, funicle segments and pedicel not subequal in length and breadth, with either the first funicle segment distinctly shorter than pedicel, or funicle segments broadening distinctly so that clava is wider than first funicle segment 197
- 197 (196) Mandibles with one or two teeth and a truncation (Figs 72, 73, 91). Clava apically rounded or obliquely truncate. Hypopygium, at most, reaching only just over half way along gaster 198
- Mandibles with three acute teeth (Fig. 97), or, if the upper tooth is truncate then hypopygium more or less reaches apex of gaster and apex of clava is transversely truncate 200
- 198 (197) Posterior margin of mesoscutum gently curved or with either side straight and centrally slightly angled so that axillae appear to meet centrally or are not greatly separated by posterior margin of mesoscutum (Fig. 78). Marginal vein punctiform, postmarginal at least half as long as stigmal (Fig. 75). Antenna with short setae, the longest less than half as long as the diameter of the first funicle segment. Mesoscutum bright metallic green or blue-green.
Parasites of psyllid nymphs **PSYLLAEPHAGUS** (p. 226)
- Posterior margin of mesoscutum usually produced backwards in middle third so that axillae appear to be widely separated (as in Fig. 77). Marginal vein longer than broad, or, if punctiform then stigmal vein is very short and rarely longer than marginal and postmarginal usually indistinct. Antenna with longer setae, the longest about as long, or longer than diameter of first funicle segment. Mesoscutum usually not bright metallic green or blue-green 199
- 199 (198) Stigmal vein very short, not longer than the very short more or less punctiform marginal, post-marginal indistinct or absent (as in Fig. 76) **OOENCYRTUS** (p. 217)
- Marginal vein always longer than broad, stigmal relatively long, postmarginal distinct and nearly as long as stigmal 200
- 200 (197, 199) Clava entire and obliquely truncate (as in Fig. 96) **LITOMASTIX** (p. 208)
- Either clava three-segmented or apically rounded 201
- 201 (200) Hypopygium reaching to at least five-sixths along gaster. Antennal torulus very close to mouth margin, separated by less than half its length. Funicle segments more or less subequal in width. Marginal vein punctiform, postmarginal vein sometimes very short or almost absent. Mandibles always with three acute teeth or rarely with upper tooth blunt or truncate **COPIDOSOMA** (p. 189)
- Hypopygium reaching to at most two-thirds along gaster. Antennal torulus separated from mouth margin by more than half its length. Funicle segments distinctly widening towards apex of antenna. Marginal vein longer than broad, postmarginal vein always at least half as long as stigmal. Mandibles usually not with three acute teeth 202
- 202 (201) Exserted part of ovipositor at least as long as one-third length of gaster. Scutellum dorsally very flat with deep punctate to slightly elongate sculpture **GRISSELLIA** (p. 197)
- Ovipositor not, or hardly, protruding. Either scutellum convex, occasionally with punctate sculpture, or flat and quite smooth 203
- 203 (202) Scutellum longitudinally striate with silky lustre **MERCETENCYRTUS** (p. 211)
- Scutellum not longitudinally striate and without silky lustre 204



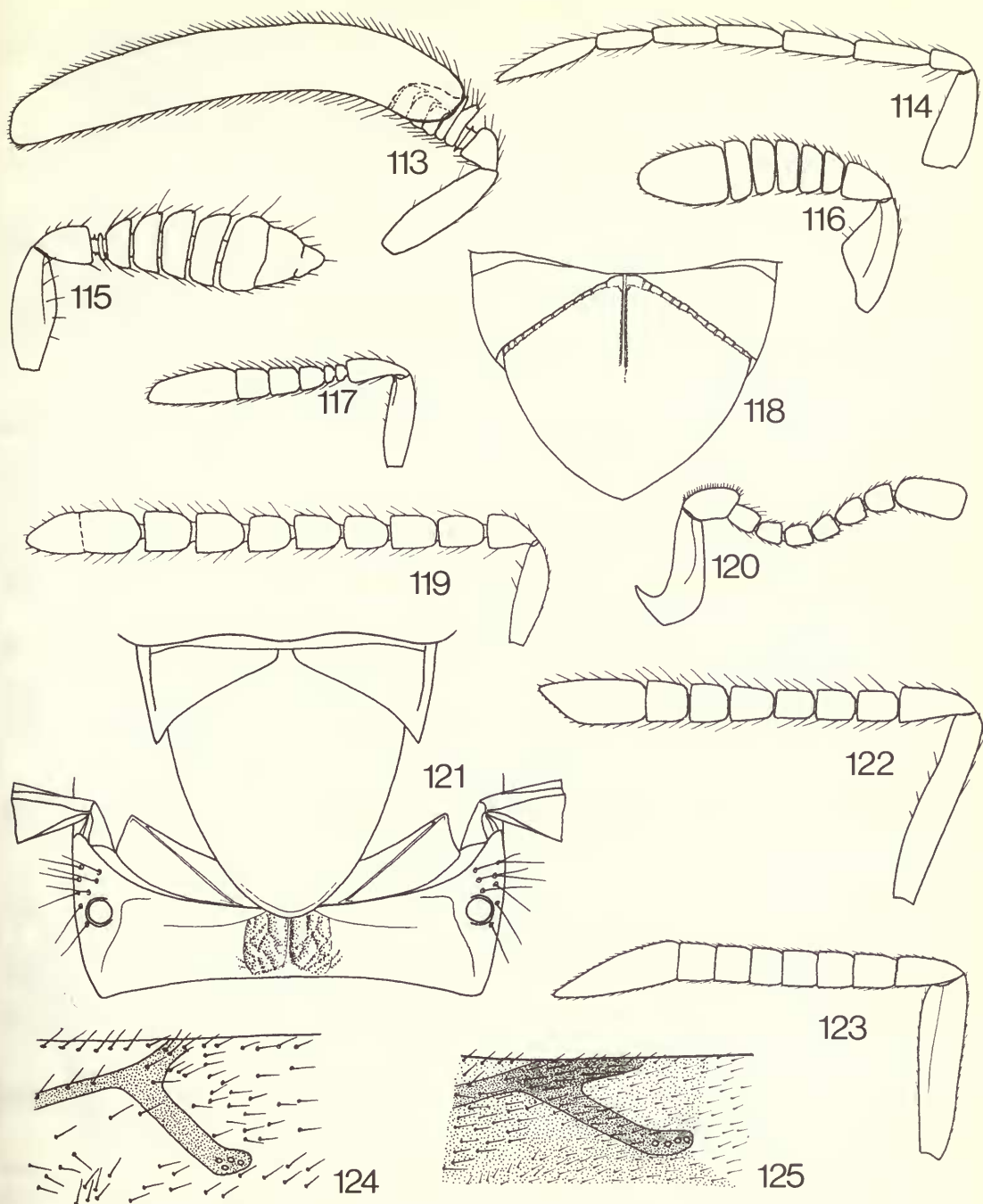
Figs 87–97 87, *Bothriothorax* sp. ♀, left forewing venation, upper surface; 88, *Helmecephala albisetosa* sp. n. ♀, left antenna, outer aspect; 89, *Coccidoctonus trinidadensis* Crawford ♀, gaster in dorsal view; 90, *Mucrencyrtus insulanus* sp. n. ♂, left forewing base, upper surface; 91, *Echthrodryinus* sp. ♀, left mandible, ♀; 92, *Cyderius urbicola* sp. n., left antenna, outer aspect; 93, *Tachardiobius nigricans* De Santis ♀, head in frontal aspect (reconstructed from collapsed head of holotype); 94, *Amaurilyma* sp. ♀, scutellum in dorsal view; 95, *Szelenyiola* sp. ♀, head in frontal aspect; 96, *Litomastix truncatella* (Dalman) ♀, left antenna, outer aspect; 97, *Copidosoma koehleri* Blanchard ♀, left mandible.

- 204 (203) Eyes and frontovertex with conspicuous long dark setae. Scutellum moderately flat, quite smooth and shiny **EXORISTOBIA** (p. 196)
- Eyes and frontovertex without conspicuous long dark setae. Scutellum very convex and with distinct sculpture 205
- 205 (204) Scutellum (without axillae) relatively long and narrow, a little longer than broad at base and not evenly rounded. Forewing venation usually dark brown **SYRPHOPHAGUS** (p. 230)
- Scutellum (without axillae) relatively broader, little wider than long and rather evenly rounded. Forewing venation usually yellowish or testaceous 206
- 206 (205) Apex of scutellum very shiny, contrasting with anterior two-thirds or three-quarters which has distinct (sometimes deep) sculpture. Marginal vein not more than twice as long as broad. Head, in side view, less than twice as long as deep **ECHTHRODRYINUS** (p. 193)
- Apex of scutellum with distinct sculpture. Marginal vein at least twice as long as broad. Head, in side view, at least twice as long as deep **TRICHOMASTHUS** (p. 234)
- 207 (177) Dorsum of thorax, including axillae, orange or yellow 208
- At least axillae or mesoscutum dark 212
- 208 (207) Body dorso-ventrally flattened. Mesoscutum entire. Mandibles bidentate with teeth of equal length **RHOPUS** (p. 226)
- Body not flattened. Mandibles not bidentate, or, if bidentate then either upper tooth is much longer than lower (*Rhytidothorax*) or mesoscutum has notaular lines anteriorly indicated (*Cirrhencyrtus*). 209
- 209 (208) Propodeum medially at least one-sixth as long as scutellum and with rough sculpture centrally (as in Fig. 121). Frontovertex and eyes with distinct long setae. Scutellum only slightly convex. Forewing with setae in basal cell longer than those in centre of wing **RHYTIDOTHORAX** (p. 226)
- Propodeum medially at most one-eighth as long as scutellum and without sculpture centrally. Frontovertex and eyes not usually with conspicuous long setae. Forewing with setae in basal cell usually not, or hardly, longer than those in centre of wing. Scutellum usually distinctly convex 210
- 210 (209) Mesoscutum and scutellum clothed in conspicuous dark setae, notaular lines completely absent. Gaster very short, at most as long as scutellum (care! if material has been in alcohol gaster may be distended) **APHYCOMORPHA** (p. 175)
- Mesoscutum and scutellum usually with pale setae, at most scutellum with conspicuous dark setae, notaular lines usually anteriorly indicated or complete. Gaster much longer than scutellum 211
- 211 (210) Mandibles bidentate, or with third (upper) tooth rudimentary. Marginal vein about three times as long as broad. Setae on scutellum often dark and conspicuous. Exserted part of ovipositor over half as long as gaster. Hypopygium reaching apex of gaster **CIRRHENCYRTUS** (p. 187)
- Mandibles with three acute teeth. Marginal vein more or less punctiform. Setae on mesoscutum and scutellum pale. Exserted part of ovipositor rarely as long as half length of gaster. Hypopygium occasionally reaching apex of gaster. **METAPHYCUS** (p. 212)
- 212 (207) Head with at least three pale membranous lines, two of which run near inner eye margins from near anterior ocellus to near antennal toruli and a third transverse line which connects these near the top of the antennal scrobes (Fig. 95 also as in 128) 213
- Body slightly dorso-ventrally flattened, mandibles tridentate 214
- Head without membranous lines. 214
- 213 (212) Clava entire **SZELENYIOLA** (p. 231)
- Clava three-segmented **AVETIANELLA** (p. 179)
- 214 (212) Body dorso-ventrally flattened. Cerci situated about half way along gaster. Ovipositor not or hardly visible. Mandibles bidentate. **RHOPUS** (p. 226)



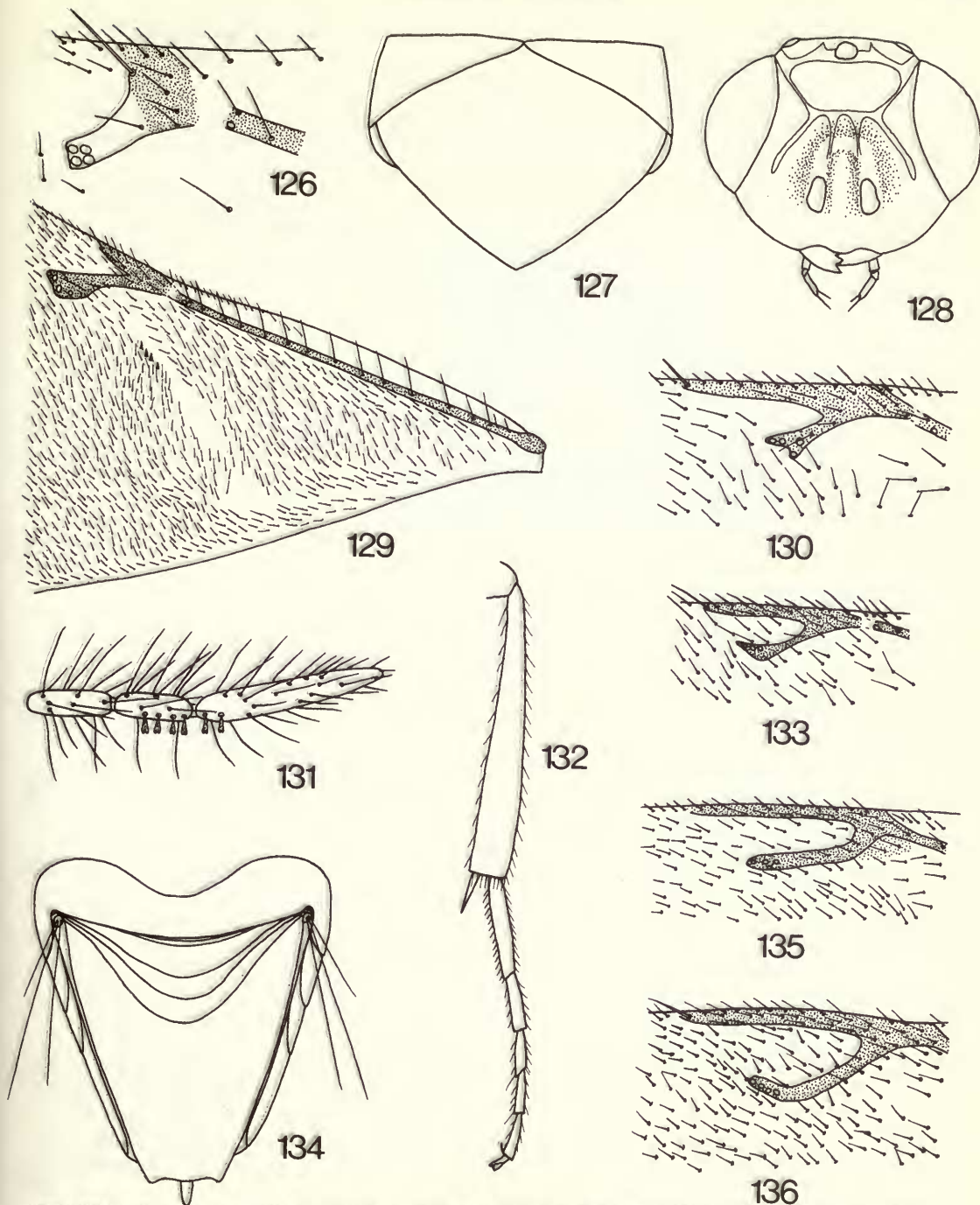
Figs 98–112 98, *Forcipestricis* sp. ♀, scutellum showing tubercles; 99, *Forcipestricis gazeau* Burks ♀, scutellum showing tubercles; 100, *Coelopencyrtus gargaris* (Walker) ♀, left mandible; 101, *Epiencyrtus* sp. ♀, left antenna, outer aspect; 102, *Papaka confusor* sp. n. ♀, left mandible; 103, *Neococcidencyrtus crouzelae* De Santis ♀, left mandible; 104, *Grissellia terebrata* sp. n. ♀, left mandible; 105, *Copidosoma* sp. ♀ near *silvestrii* (Costa Lima), left mandible; 106, *Amaurilyma* sp. ♀, left antenna, outer aspect; 107, *Copidosoma* sp. ♀ near *silvestrii* (Costa Lima), right antenna, outer aspect; 108, *Cicoencyrtus angustifrons* sp. n. ♀, head, frontal aspect; 109, *Copidosoma* sp. ♀ near *silvestrii* (Costa Lima), left forewing venation, upper surface; 110, *Grissellia terebrata* sp. n. ♀, left forewing base, upper surface; 111, *Anabrolepis zetterstedtii* (Westwood) ♂, left antenna, outer aspect; 112, *Anarhopus sidneyensis* Timberlake ♂, left antenna, outer aspect.

- Body not dorso-ventrally flattened, or, if slightly flattened then cerci are nearer to base of gaster than to middle, or mandibles are not bidentate, or the exerted part of the ovipositor is at least as long as about one-quarter length of gaster 215
- 215 (212) Clava one- or two-segmented 216
- Clava three-segmented 223
- 216 (215) Clava one-segmented 217
- Clava two-segmented 220
- 217 (216) Notaular lines present in anterior half of mesoscutum. Head and large areas of thorax yellow or orange *ISODROMUS* (p. 206)
- Mesoscutum entire. Head and thorax dark 218
- 218 (217) Apex of clava obliquely truncate (Fig. 96). Postmarginal vein shorter than stigmal *LITOMASTIX* (p. 208)
- Apex of clava apically rounded or only very slightly truncate. Postmarginal vein distinctly longer than stigmal (as in Fig. 130) 219
- 219 (218) Mesoscutum shiny with shallow, transverse sculpture contrasting with the deep, longitudinally semi-striate sculpture of scutellum which is silky in appearance. First two funicle segments not much shorter than third *PARALEUROCERUS* (p. 219)
- Both mesoscutum and scutellum with longitudinal, semi-striate sculpture and both more or less silky in appearance. Each of first two funicle segments about half as long as third *AGENIASPIS* (p. 171)
- 220 (216) Antennal torulus separated from mouth margin by much less than own length. Body at least slightly dorso-ventrally flattened. Mesoscutum entire. Cerci situated about half way along gaster. Mandibles with three acute teeth. 221
- Antennal torulus separated from mouth margin by about own length. Body occasionally slightly dorso-ventrally flattened. Mesoscutum sometimes with notaular lines anteriorly indicated. Cerci situated near apex of gaster. Mandibles with two teeth and a truncation, or quadridentate. 222
- 221 (220) Antennal scrobes moderately impressed and horseshoe-shaped. Protruding part of ovipositor equal to about one-quarter length of gaster and more or less straight, not curved downwards towards apex. Frontoververtex with distinct sculpture *TANYENCYRTUS* (p. 231)
- Antennal scrobes absent or represented by extremely short, shallow grooves, much shorter than the length of an antennal torulus (Fig. 41). Protruding part of ovipositor equal to at least about half length of gaster and curved downwards towards apex. Frontoververtex highly polished *SHENAHETIA* (p. 227)
- 222 (220) Mandibles quadridentate. Notaular lines anteriorly indicated *ANDINOENCYRTUS* (p. 174)
- Mandibles bidentate with truncation. Mesoscutum entire [*Coccidencyrtus*] *obesus* De Santis (p. 188)
- 223 (215) Exserted part of ovipositor at least as long as half length of gaster. Hypopygium extending well past apex of epipygium so that it is clearly visible in dorsal view (Fig. 89). Postmarginal vein longer than stigmal *COCCIDOCTONUS* (p. 188)
- Ovipositor not or hardly protruding, or, if as long or longer than half length of gaster then hypopygium does not extend past apex of epipygium and postmarginal vein is not longer than stigmal 224
- 224 (223) Scutellum smooth and shiny, not sculptured except occasionally at extreme base 225
- At least anterior half of scutellum with distinct sculpture (occasionally quite shallow) 228
- 225 (224) Hypopygium clearly reaching apex of gaster. Frontoververtex and mesoscutum often with thimble-punctured sculpture *ZETETICONTUS* (p. 236)
- Hypopygium reaching at most two-thirds along gaster, usually no more than half way. Frontoververtex and mesoscutum never with thimble-punctured sculpture 226
- 226 (225) Propodeum medially at least one-sixth as long as scutellum and with rough central area which contrasts with smooth lateral areas (as in Fig. 121). Frontoververtex and eyes with



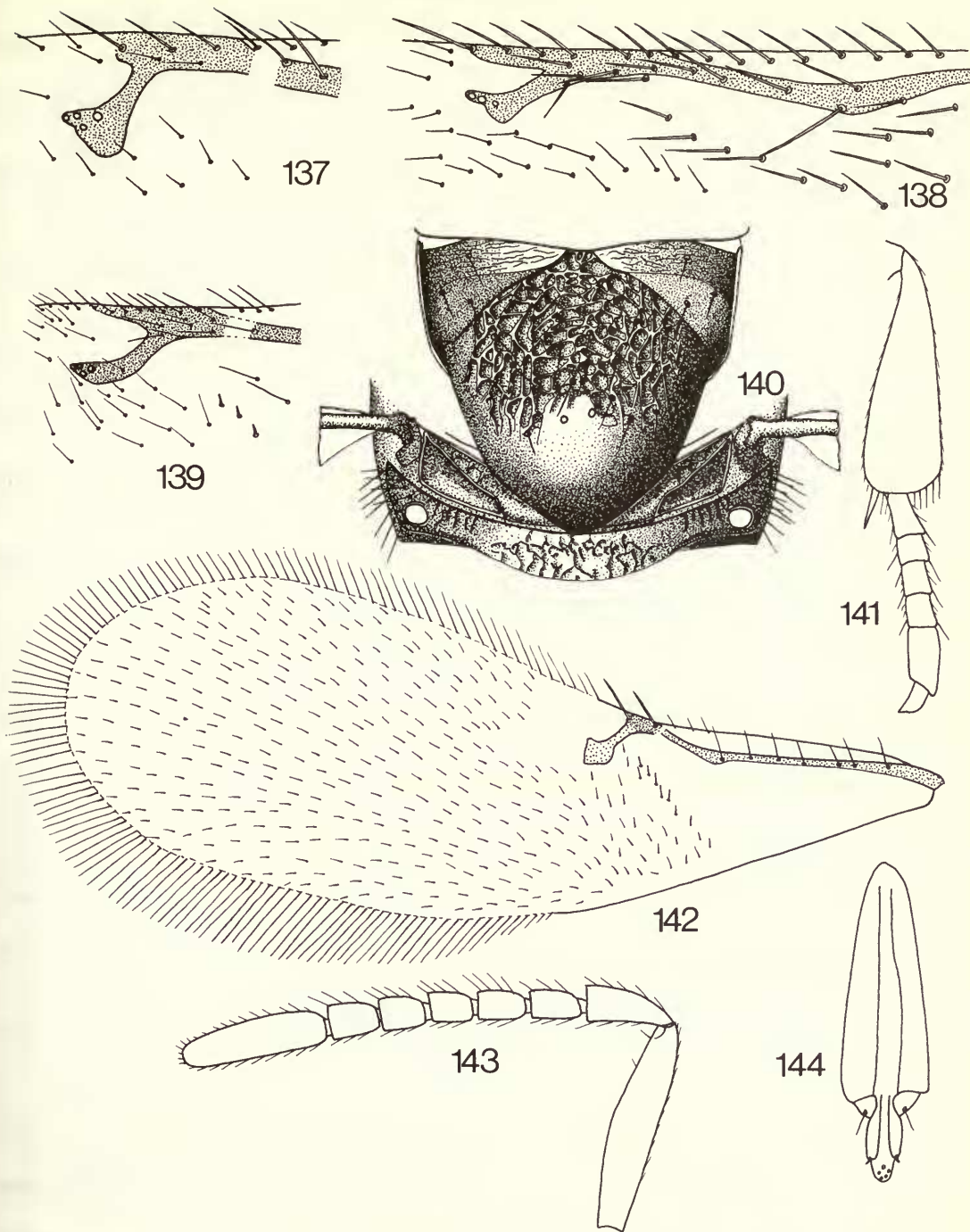
Figs 113–125 113, *Aenasius advena* (Compere) ♂, left antenna, outer aspect; 114, *Helegonatopus pseudophanes* Perkins ♂, left antenna, outer aspect; 115, *Blanchardiscus* sp. ♂, right antenna, outer aspect; 116, *Hambletonia pseudococcina* Compere ♂, left antenna, outer aspect; 117, *Ameromyzobia aphelinoides* Girault ♂, left antenna, outer aspect; 118, *Hambletonia pseudococcina* Compere ♂, scutellum in dorsal view; 119, *Desobius* sp. ♂, left antenna, outer aspect; 120, *Coelopencyrtus gargaris* (Walker) ♂, right antenna, outer aspect; 121, *Rhytidothorax* sp. ♂, scutellum and propodeum in dorsal view; 122, *Litomastix truncatella* (Dalman) ♂, left antenna, outer aspect; 123, *Homalotylus flaminus* (Dalman) ♂, left antenna, outer aspect; 124, *Isodromus iceryae* Howard ♂, right forewing venation, upper surface; 125, *Homalotylus flaminus* (Dalman) ♂, right forewing venation, upper surface.

- very distinct long setae. Scutellum without tubercles. Mandibles unidentate or bidentate **RHYTIDOTHORAX** (p. 226)
- Propodeum medially at most one-eighth as long as scutellum and without distinct central rough area. Frontoververtex and eyes without long setae, or, if present, then either scutellum has tubercles (Fig. 98, also cf. Fig. 99) (best seen in cleared slide mounts) or mandibles are tridentate 227
- 227 (226) Scutellum distinctly convex in side view with tubercles or pits (Fig. 98, also cf. Fig. 99) (best seen in cleared slide mounts). Frontoververtex smooth and shiny, or rarely sculptured, always with conspicuous long setae. Eyes hairy. Mandibles bidentate or tridentate with middle tooth longest **FORCIPESTRICIS** (p. 196)
- Scutellum almost flat and without tubercles. Frontoververtex with distinct sculpture and without any very conspicuous long setae. Eyes not conspicuously hairy. Mandibles with three teeth of about equal length **HABROLEPOIDEA** (p. 199)
- 228 (224) Apex of scutellum with tuft of setae, or, if tuft indistinct then usually at least posterior one-third of mesoscutum clothed in white setae which contrast strongly with dark colour of mesoscutum. Scutellum not shiny. Submarginal vein slightly expanded in its apical three-quarters **ZAOMMA** (p. 235)
- Apex of scutellum without tuft of setae, at most with few longer upright setae. Mesoscutum without contrasting pale setae, or, if pale setae present then submarginal vein is not expanded apically 229
- 229 (228) Both mesoscutum and scutellum with fine, longitudinal, more or less striate sculpture giving both a silky appearance. Clava as long or longer than funicle (Fig. 160) **DESOBIOUS** (p. 192)
- Thorax sculpture different: at most either only scutellum or mesoscutum with striate sculpture, never both. Clava occasionally as long or longer than funicle, but usually shorter 230
- 230 (229) Notaular lines present in anterior half of mesoscutum, or complete 231
- Notaular lines absent or indicated at extreme anterior margin of mesoscutum only 233
- 231 (230) Setae on dorsal surface of forewing, proximal to the speculum, in four lines, remainder of basal cell naked. Scutellum with deeper more elongate sculpture than mesoscutum. Notaular lines complete. Gaster completely yellow ventrally **CIBDELOENCYRTUS** (p. 185)
- Basal cell more or less completely pilose, although occasionally sparsely pilose towards base. Sculpture of scutellum more or less the same as mesoscutum. Notaular lines not complete, extending about half way across mesoscutum. Venter of gaster not yellow, except perhaps in some *Metaphycus* 232
- 232 (231) Marginal vein at least one and a half times as long as broad. Mid tibia without dark rings **SOLENOENCYRTUS** (p. 230)
- Marginal vein punctiform, or hardly longer than broad. Mid tibia yellow, usually with dark rings **METAPHYCUS** (p. 212)
- 233 (230) Mesoscutum dark brown or black, not shiny or metallic, posterior margin of pronotum usually white or distinctly paler than mesoscutum. Hypopygium never extending to apex of gaster. Mandibles with three acute teeth **METAPHYCUS** (p. 212)
- Mesoscutum at least slightly shiny, posterior margin of pronotum the same colour as mesoscutum, or darker and not distinctly paler. Hypopygium often reaching apex of gaster 234
- 234 (233) Mandibles unidentate or bidentate 235
- Mandibles tridentate (third (upper) tooth sometimes rudimentary) or with one or two teeth and a truncation 238
- 235 (234) Hypopygium convex, more or less boat-shaped and reaching apex of gaster 236
- Hypopygium hardly convex, reaching at most to three-quarters along gaster 237
- 236 (235) Postmarginal vein very short, much shorter than stigmal, submarginal vein with a triangular expansion in its apical third (as in Fig. 20). Frontoververtex with reticulate sculpture. Body not robust **PAURIDIA** (p. 221)



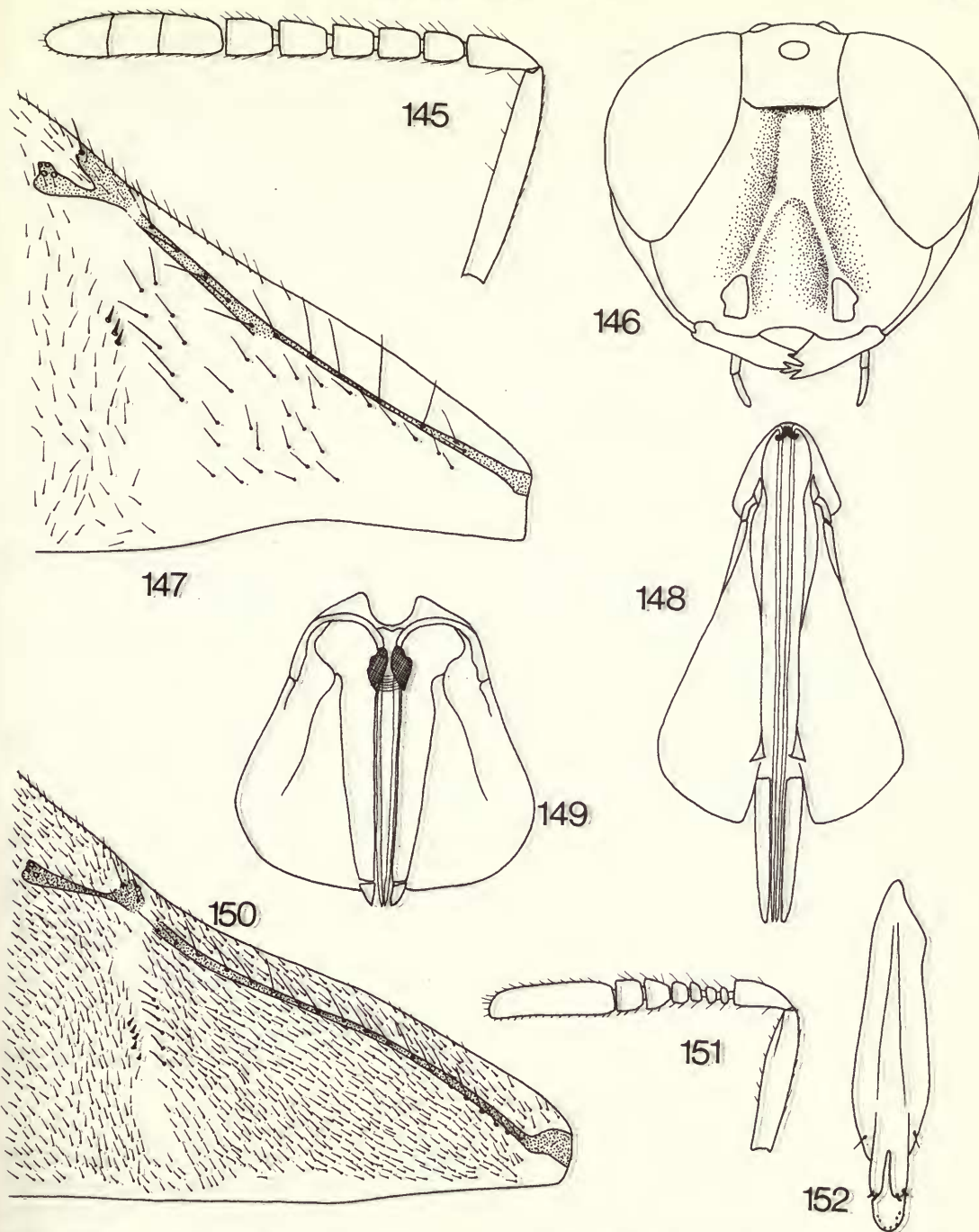
Figs 126–136 126, *Pentalitomastix plethoricus* Caltagirone ♂, left forewing venation, upper surface; 127, *Baeoencyrtus platys* De Santis ♂, scutellum in dorsal view; 128, *Avetianella* sp. ♂, head in frontal aspect; 129, *Metaphycus* sp. ♂, left forewing base, upper surface; 130, *Ageniaspis fuscicollis* (Dalman) ♂, left forewing venation, upper surface; 131, *Anagyrus* sp. ♂, apical segments of right antenna to show perpendicular sensillae; 132, *Hunterellus hookeri* Howard ♂, left hind tibia and tarsus, outer aspect; 133, *Microterys* ? *flavus* (Howard) ♂, left forewing venation, upper surface; 134, *Anagyrus* sp. ♂, gaster in dorsal view; 135, *Prionomastix* sp. ♂, left forewing venation, upper surface; 136, *Encyrtus infelix* (Embleton) ♂, left forewing venation, upper surface.

- Postmarginal vein much longer than stigmal, submarginal vein without triangular expansion. Frontovertex with thimble-punctured sculpture. Body very robust. **BLEPYRUS** (p. 182)
- 237 (235) Scutellum with tubercles or pits (as in Figs 98, 99) (best seen in cleared slide mounts). Frontovertex almost always smooth and shiny. Propodeum short medially, at most one-sixth as long as scutellum and smooth. Proximal funicle segments often anelliform, contrasting with longer distal segments. Mandibles bidentate. **FORCIPESTRICIS** (p. 196)
- Scutellum without tubercles or pits. Frontovertex with distinct sculpture and not very shiny. Propodeum medially usually longer than one-sixth scutellum, sculptured centrally and contrasting with the smoother lateral areas (as in Fig. 121). Funicle segments usually becoming shorter distally. Mandibles unidentate (Fig. 54) or bidentate (Figs 55, 56) **RHYTIDOTHORAX** (p. 226)
- 238 (234) Propodeum shiny and with distinct median carina and medially at least one-fifth as long as the flat scutellum which has deeper more elongate sculpture than mesoscutum. Submarginal vein with triangular expansion in its apical one-third (Fig. 57) (often indistinct). Marginal vein at least twice as long as broad. Occipital margin more or less rounded **PARECHTHRODRYINUS** (p. 221)
- Propodeum normally without distinct median carina and medially at most one-sixth as long as scutellum, or, if longer and with median carina, then scutellum distinctly convex, submarginal vein usually without a triangular expansion and occipital margin acute. Marginal vein often punctiform and scutellum occasionally with elongate sculpture 239
- 239 (238) Scutellum with distinct tubercles or pits, either scattered or in a distinct group on each side (as in Figs 98, 99) (best seen in cleared slide mounts). Frontovertex with conspicuous long setae and almost always smooth and very shiny. Eyes very hairy. Hypopygium not reaching apex of gaster.
Mandibles with middle tooth longest. Antennae often with at least one or two proximal funicular segments anelliform, contrasting with distal segments which are subquadrate **FORCIPESTRICIS** (p. 196)
- Scutellum without tubercles or pits, or, if some present then hypopygium reaches apex of gaster (*Amaurilyma*). Frontovertex with distinct sculpture and usually without long conspicuous setae. Eyes rarely very hairy 240
- 240 (239) Exserted part of ovipositor well over half length of gaster. Frontovertex very narrow, at narrowest point at most about one-fifth head width and sometimes only slightly wider than anterior ocellus (Fig. 108) **CICOENCYRTUS** (p. 186)
- Ovipositor not or hardly protruding, never with protruding part as long as half length of gaster. Frontovertex never as narrow as above, or, if as narrow (*Euryrhopalus*) then ovipositor more or less hidden 241
- 241 (240) Clava large, about twice as wide as sixth funicle segment and longer than funicle and with a very strong oblique truncation which is longer than length of ventral surface of clava, all funicle segments transverse and unicolorous (Fig. 101). Marginal vein about three times as long as broad. Hypopygium not reaching apex of gaster **EPIENCYRTUS** (p. 195)
- Clava usually relatively smaller (although sometimes much longer than funicle) and with rounded apex, or, if truncate then truncation is transverse and marginal vein is punctiform, or, if truncation is oblique then it is very short, much shorter than length of ventral side of clava and the clava is shorter than funicle or the hypopygium reaches the apex of gaster 242
- 242 (241) Scutellum at most, only slightly convex, more or less flat, not shiny, relatively shallow in side view and with deep punctate or elongate sculpture which is distinctly deeper than that on shiny mesoscutum (except in *Papaka* where mesoscutum may also have punctate sculpture), sculpture never shallower than that on mesoscutum. Head often triangular in side view with frontovertex flat in profile 243
- Scutellum distinctly convex, or, if dorsally flat then sides are long and convex and it is relatively deep in side view, or it is rather shiny with very much shallower sculpture



Figs 137–144 137, *Shenahetia masneri* sp. n. ♂, left forewing venation, upper surface; 138, *Parechthrodryinus nitidus* (Howard) ♂, left forewing venation, upper surface; 139, *Tanyencyrtus divisus* De Santis ♂, left forewing venation, upper surface; 140, *Helegonatopus* sp. ♂, scutellum and propodeum in dorsal view; 141, 142, *Arrhenophagoidea* sp., ♀, (141) left hind tibia and tarsus, outer aspect, (142) left forewing, upper surface; 143, 144, *Arhopoidiella carinata* sp. n., ♂, (143) left antenna, outer aspect, (144) genitalia.

- than mesoscutum. Scutellum only occasionally with deeper sculpture than mesoscutum. Head rounded in profile 248
- 243 (242) Mandibles with four acute teeth (Fig. 46). Mid tibia completely yellow without dark bands *ADELENCYRTUS* (p. 170)
- Mandibles with one tooth or two teeth and a truncation (the latter may have the truncate third (upper) tooth rudimentary (Fig. 102)). Mid tibia often brown or yellow with dark bands 244
- 244 (243) Frontoververtex, at narrowest point, at least one-third head width. Clava yellow or testaceous, funicle usually concolorous or slightly paler, rarely darker. Clava long, almost as long as, or longer than, funicle, usually much longer *COCCIDENCYRTUS* (p. 188)
- Frontoververtex, at narrowest point, at most one-quarter head width. Clava and first four funicle segments brown, often segments five and six yellowish or testaceous. Clava at most as long as funicle 245
- 245 (244) Sides and apex of scutellum steep, flat and polished. Clava about as long as funicle and segments five and six of funicle usually yellow *NEOCOCCIDENCYRTUS* (p. 216)
- Sides of scutellum short and convex, not flat or polished. Clava at most about two-thirds as long as funicle, or, if longer then funicle segments five and six are concolorous with rest of funicle 246
- 246 (245) Mandibles with upper tooth rudimentary, almost absent (Fig. 102). Sixth funicle segment often yellow and contrasting with rest of funicle and clava. Setae on funicle short, the longest much shorter than diameter of first funicle segment *PAPAKA* (p. 217)
- Mandibles with third (upper) tooth broad and truncate (Fig. 104). Sixth funicle segment concolorous with rest of flagellum. Setae on funicle long, the longest at least as long as diameter of first funicle segment 247
- 247 (246) Postmarginal vein distinct, nearly as long as stigmal (as in Fig. 110) *GRISSELLIA* (p. 197)
- Postmarginal vein more or less absent or extremely short (as in Fig. 76) *OOENCYRTUS* (p. 217)
- 248 (242) Antenna with funicle not unicolorous, with contrasting dark and light segments. *PARALITOMASTIX* (p. 219)
- Antenna with funicle unicolorous without contrasting dark and light segments 249
- 249 (248) Postmarginal vein much longer than stigmal 250
- Postmarginal vein not longer than stigmal 251
- 250 (249) Frontoververtex, at narrowest point, at least one-sixth head width *BLEPYRUS* (p. 182)
- Frontoververtex, at narrowest point, at most one-eighth head width *EURYRHOPALUS* (p. 196)
- 251 (249) Hypopygium reaching apex of gaster, or, if reaching to only four-fifths of gaster then marginal vein punctiform (Fig. 109) and mandibles have three acute teeth (Fig. 97) (if third (upper) tooth blunt (Fig. 105) then clava transversely truncate (Fig. 107)) 252
- Hypopygium, at most, reaching just over half way along gaster. Marginal vein distinctly longer than broad, or, if punctiform then mandibles have at most two acute teeth (if with third (upper) tooth developed and blunt then clava apically rounded or distinctly obliquely truncate) 254
- 252 (251) Antenna very short, about as long as width of head, mandibles with third (upper) tooth apically rounded or truncate (Fig. 100) *COELOPENYRTUS* (p. 189)
- Antenna longer, at least one and a half times as long as width of head. Mandibles with upper tooth acute 253
- 253 (252) Antenna with clava obliquely truncate (Fig. 106). Scutellum with very deep, rough, longitudinal sculpture and short, thin, apical extension (Fig. 94) *AMAUROYMA* (p. 171)
- Antenna with clava apically rounded or with transverse truncation (Fig. 107) not obliquely truncate. Scutellum not with rough longitudinal sculpture and without apical extension *COPIDOSOMA* (p. 189)



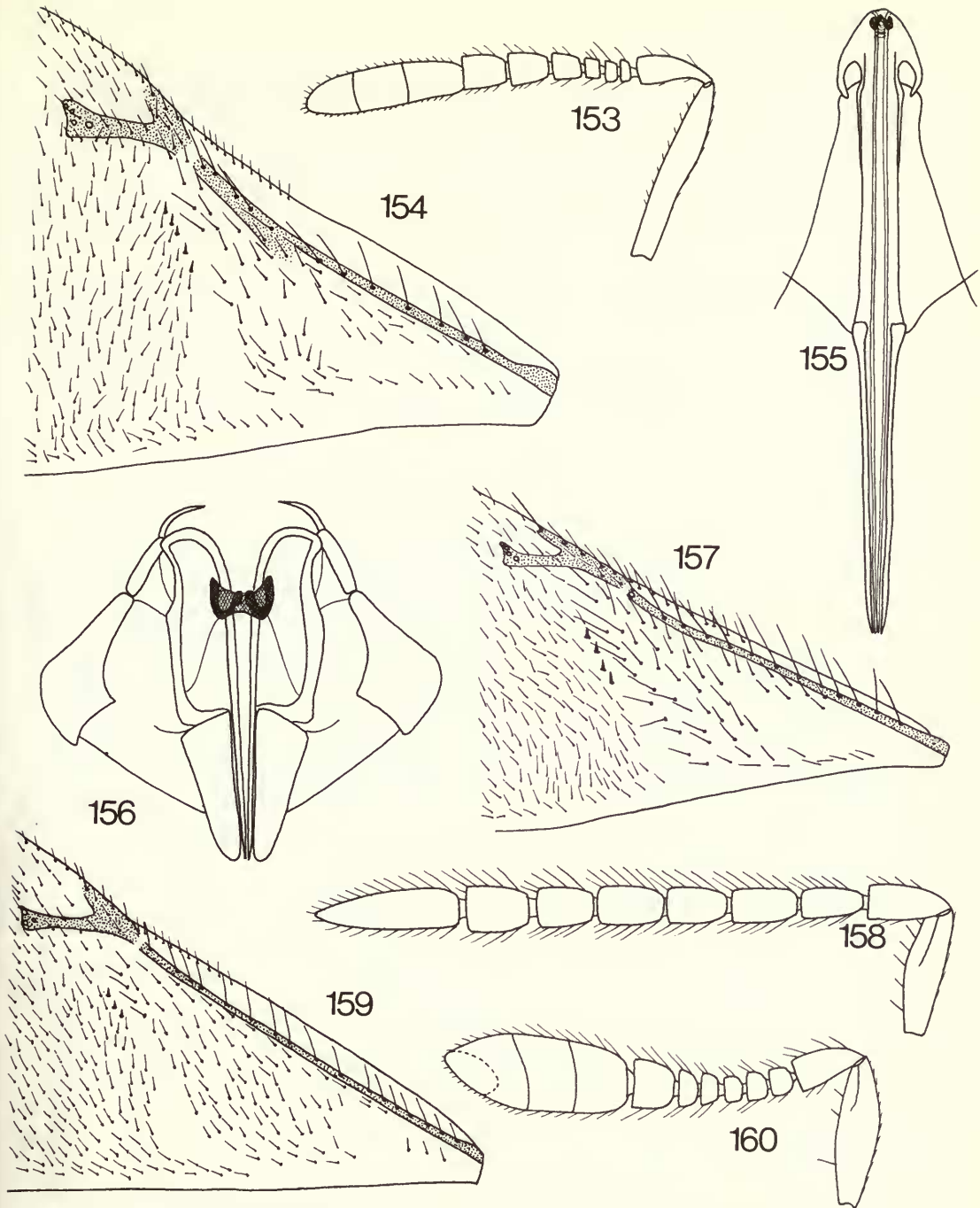
Figs 145–152. 145–148, *Arhopoidiella carinata*, sp. n. ♀, (145) left antenna, outer aspect, (146) head in frontal aspect; (147) left forewing base, upper surface, (148) genitalia; 149, 150, *Bennettisca flavigena*, sp. n. ♀, (149) genitalia, (150) left forewing base, upper surface; 151, 152, *Cicoencyrtus angustifrons*, sp. n. ♂, (151) left antenna, outer aspect, (152) genitalia.

- 254 (251) Posterior margin of mesoscutum gently curved or slightly angled so that axillae appear to be more or less touching apically (Fig. 78). Forewing: marginal vein punctiform or hardly longer than broad, stigmal vein long and postmarginal distinct, longer than marginal (Fig. 75). Antenna with setae relatively short, the longest much shorter than half diameter of the first funicle segment. Mesoscutum bright metallic green or blue-green.
Parasites of psyllid nymphs **PSYLLAEPHAGUS** (p. 226)
- Posterior margin of mesoscutum usually rather convex in median third so that axillae appear to be widely separated (as in Fig. 77). Marginal vein at least about twice as long as broad, or, if punctiform (as in Fig. 76) then stigmal is short, not longer than marginal and postmarginal very short or indistinct, not longer than marginal and axillae distinctly separated by posterior margin of mesoscutum. Antenna with setae relatively longer, the longest at least half as long as diameter of the first funicle segment; mesoscutum occasionally green or blue-green but never very bright 255
- 255 (254) Marginal vein punctiform, rarely longer than broad and often relatively thick, stigmal vein short, almost sessile, postmarginal vein very short or absent (as in Fig. 76).
Egg parasites **OOENCYRTUS** (p. 217)
- Marginal vein at least one and a half times, and usually at least twice, as long as broad, stigmal vein always relatively long and postmarginal always distinct and as long or nearly as long as stigmal (as in Fig. 74) (occasionally marginal vein punctiform, but postmarginal vein nearly as long as stigmal vein) 256
- 256 (255) Scutellum quite flat and shiny with very shallow inconspicuous sculpture. Eyes and frontovertex with very distinct, long, dark setae. **EXORISTOBIA** (p. 196)
- Scutellum never flat and shiny, usually distinctly convex or with deep sculpture. Eyes and frontovertex without conspicuous setae, or, if these are present then scutellum very convex or with deep, conspicuous sculpture 257
- 257 (256) Scutellum (without axillae) at most as long as broad, usually broader than long and almost uniformly convex, sculpture (of scutellum) often deeply punctate, particularly in basal half, apical half or third often smooth and shiny. Eyes usually rather hairy. Marginal vein sometimes punctiform **ECHTHRODRYINUS** (p. 193)
- Scutellum (without axillae) longer than broad and normally abruptly convex at sides and apex, sculpture uniform and never deeply punctate, occasionally striate (in latter case the extreme apex is quite shiny). Eyes more or less naked. Marginal vein always distinctly longer than broad 258
- 258 (257) Scutellum longitudinally striate and with silky lustre **MERCETENCYRTUS** (p. 211)
- Scutellum longitudinally striate and without silky lustre 259
- 259 (258) Setae on flagellum finer and shorter, usually with the longest not longer than diameter of first funicle segment. Generally smaller species:—length less than 1 mm. Parasites of Aphididae (or perhaps psyllid nymphs) **APHIDENCYRTUS** (p. 175)
- Setae on flagellum usually coarser and longer, the longest about as long or longer than the diameter of the first funicle segment. generally larger species:—length greater than 1.5 mm. Parasites of syrphid larvae (Diptera) **SYRPHOPHAGUS** (p. 230)

Key to genera (males)

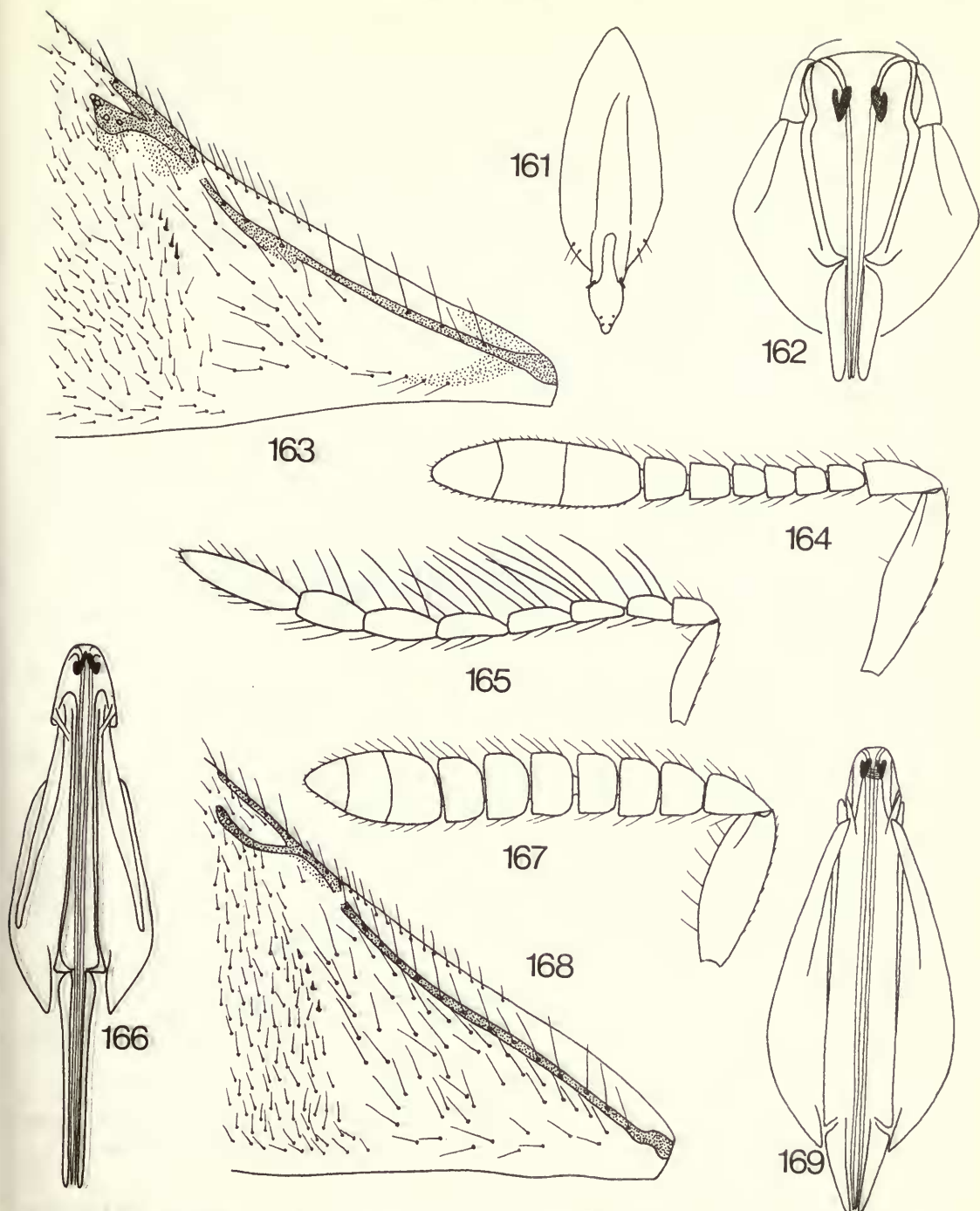
The following genera are not included because the males are unknown or their presence in the Neotropics is doubtful: *Acroaspida*, *Anathrix*, *Andinoencyrtus*, *Anusioptera*, *Aphycomastix*, *Arrhenophagoidea*, *Atelaphycus*, *Aztecencyrtus*, *Bennettisca*, *Calliencyrtus*, *Cerchysius*, *Cibdeloencyrtus*, *Cyderius*, *Deloencyrtus*, *Dicarnosis*, *Ectroma*, *Epiencyrtus*, *Exoristobia*, *Habrolepodea*, *Homosemion*, *Hoplopsis*, *Lohiella*, *Mariola*, *Moorella*, *Neapsilophrys*, *Paramucrona*, *Parencyrtus*, *Pelmatencyrtus*, *Pheidoloxenus*, *Platylyca*, *Prionomitus*, *Protyndarichoides*, *Simmondsiella*, *Solenencyrtus*, *Tetarticlava*, *Tineophoctonus*, *Tyndarichoides*.

- | | | |
|---|---|---|
| 1 | Funicle with long rami (Fig. 112) | 2 |
| — | Funicle simple, without rami | 6 |



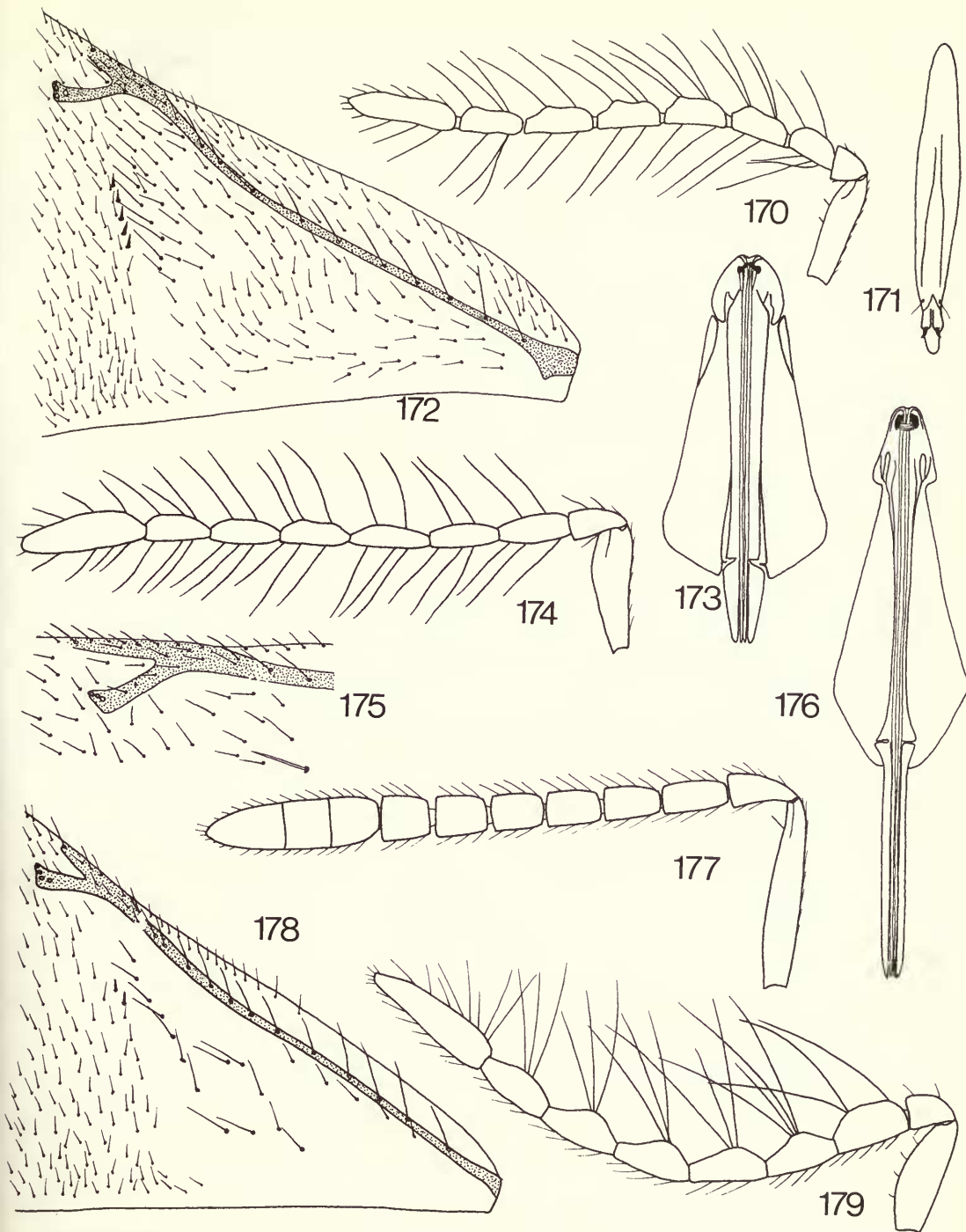
Figs 153–160 153–155, *Cicoencyrtus angustifrons* sp. n. ♀, (153) left antenna, outer aspect, (154) left forewing base, upper surface, ♂, (155) genitalia; 156–158, *Amaurilyma* sp., (156) genitalia, ♀, (157) left forewing base, upper surface, ♀, (158) left antenna, outer aspect, ♂; 159, *Cyderius urbicola* sp. n. ♀, left forewing base, upper surface, 160, *Desobius convexus* sp. n. ♀, left antenna, outer aspect.

- 2 Funicle five-segmented 3
 - Funicle six-segmented 4
- 3 (2) Fifth funicle segment with short apical ramus (Fig. 112) about one-quarter length of segment. Scutellum with slightly deeper, coarser sculpture than mesoscutum, greenish. *ANARHOPUS* (p. 173)
 - Fifth funicle segment simple. Scutellum with slightly shallower sculpture than mesoscutum, purple, contrasting with the green mesoscutum. *TETRACNEMOIDEA* (p. 233)
- 4 (2) First funicle segment simple and transverse *TETRACNEMUS* (p. 233)
 - First funicle segment with ramus 5
- 5 (4) Scape not reaching anterior ocellus. Forewings hyaline. Body metallic green or blue-green. *PARABLASTOTHRIX* (p. 218)
 - Scape reaching well above level of posterior ocelli. Forewings usually with some infusate areas. Body orange to dark brown, never metallic. *HEXACLADIA* (p. 203)
- 6 (1) Funicle composed of two to five anelliform segments, clava extremely long and sausage-shaped (Figs. 111, 113), more than twice (usually more than three times) as long as scape. 7
 - If all funicle segments are anelliform then clava at most one and a half times as long as scape and not sausage-shaped. 8
- 7 (6) Mandibles with four teeth or with two acute teeth and a truncation. Funicle two-segmented; clava with base rounded and articulated to funicle in centre (Fig. 111). Marginal vein as long or longer than short stigmal, postmarginal shorter than radial. *ADELENCYRTUS* (p. 170), *PLAGIOMERUS* (p. 222), *ANABROLEPIS* (p. 172), *HABROLEPIS* (p. 199), *?HOMALOPODA* (p. 203), *?PSEUDHOMALOPODA* (p. 225)
 - Mandibles with two or three teeth. Funicle two- to five-segmented (sometimes in dorsal view only two segments visible, the others being hidden by base of clava, this being most easily observed in slide-mounted material); clava with base not rounded, dorsally produced towards pedicel thus partially obscuring funicle and articulated on ventral side (Fig. 113). Marginal vein more or less punctiform, postmarginal as long or longer than stigmal which is several times longer than marginal. *CHALCASPIS* (p. 184), *AENASIUS* (p. 170)
- 8 (6) Funicle of fewer than six segments 9
 - Funicle of six or more segments 25
- 9 (8) Funicle three- or four-segmented, all segments more or less anelliform. *BLEPYRUS* (p. 182)
 - Funicle five-segmented.
 First segment may be anelliform or partially obscured by pedicel on second funicle segment giving funicle a four-segmented appearance. 10
- 10 (9) Mesoscutum with notaular lines complete (as in Fig. 8) or extending at least about quarter of way towards posterior margin of mesoscutum. 11
 - Notaular lines completely absent, or indicated only at extreme anterior margin of mesoscutum. 14
- 11 (10) Notaular lines only visible in anterior half of mesoscutum. 12
 - Notaular lines complete or very nearly reaching posterior margin of mesoscutum. 13
- 12 (11) First funicle segment anelliform, the remaining four much longer than broad and with very short setae, shorter than one-third diameter of segments. Propodeum at least one-third length of scutellum and shiny. Forewing with a large infumate area below marginal vein extending to posterior margin of wing. *MEROMYZOBIA* (p. 212)
 - First funicle segment at least about as long as broad, not shorter than remainder. Setae on funicle well over half diameter of segments. Propodeum at most one-fourth as long as scutellum and not very shiny. Forewing very slightly infumate in anterior half. *ACEROPHAGOIDES* (p. 169)



Figs 161–169 161, *Desobius* sp. ♂, genitalia; 162, 163, *Desobius convexus* sp. n. ♀, (162) genitalia, (163) left forewing base, upper surface; 164, *Grissellia terebrata* sp. n. ♀, left antenna, outer aspect, ♀; 165, *Grissellia* sp. ♂, left antenna, outer aspect; 166, *Grissellia terebrata* ♀, genitalia; 167, *Exoristobia* sp. ♀, left antenna, outer aspect; 168, *Exoristobia* sp. ♀, left forewing base, upper surface; 169, *Exoristobia* sp. ♀, genitalia.

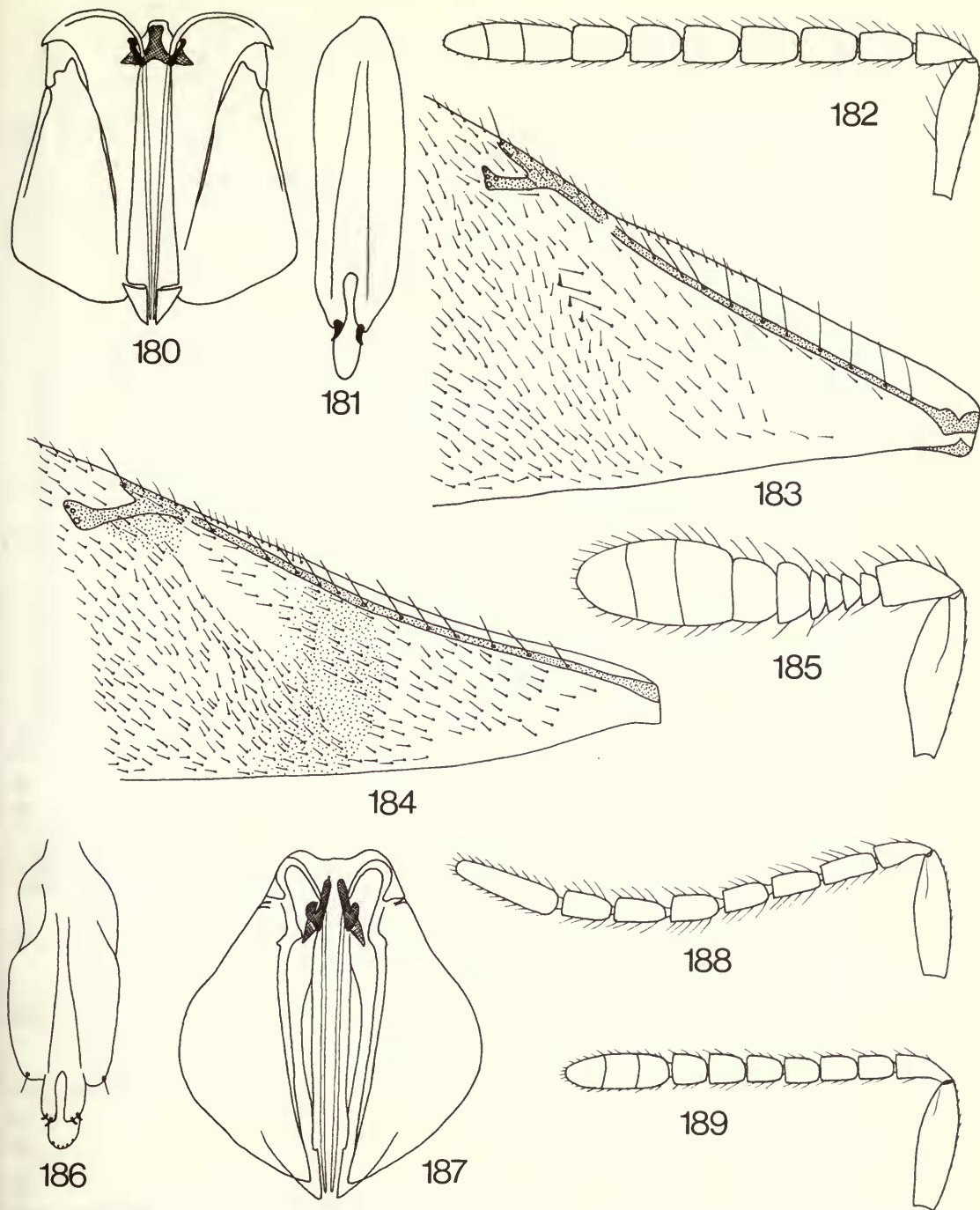
- 13 (11) Thorax yellow or orange, scutellum with apex well rounded and with sculpture not deeper than that on mesoscutum **SOLENAPHYCUS** (p. 230)
 - Thorax dark and metallic. Scutellum with apex more or less pointed and with sculpture distinctly deeper and coarser than that on mesoscutum **COCCIDAPHYCUS** (p. 187)
- 14 (10) Wings absent **STEMMATOSTERES** (p. 230)
 - Wings fully developed or extending past apex of gaster 15
- 15 (14) Antennae about as long as body, all funicle segments at least about twice as long as broad and with setae at least as long as diameter of segments, scape triangular and broadest at base (Fig. 114). Body metallic green **HELEGONATOPUS** (p. 200)
 - Antennae much shorter than body, generally not more than half as long, usually some funicle segments transverse or subquadrate, rarely all longer than broad, none as much as twice as long as broad, setae on funicle shorter than diameter of segments, scape usually widest at about middle. Body often orange, rarely green 16
- 16 (15) Clava two-segmented, funicle with a small, very transverse first segment, the remainder much longer and each about twice as broad as long (Fig. 115). Scutellum produced apically in a tongue-like extension which curls downwards towards the posterior margin of propodeum (Fig. 12) **BLANCHARDISCUS** (p. 182)
 - Clava entire, funicle not as above, scutellum not produced apically 17
- 17 (16) Postmarginal vein longer than stigmal **EURYRHOPALUS** (p. 196)
 - Postmarginal vein not longer than stigmal 18
- 18 (17) Scutellum with central ridge which arises between the apices of the axillae and extends posteriorly for about half its length (Fig. 118). Scape triangular in side view, about twice as long as broad and widest in the middle (Fig. 116). Mandibles bidentate **HAMBLETONIA** (p. 200)
 - Scutellum without central ridge. Scape not triangular, if broadened then ventral edge gradually curved. Mandibles tridentate 19
- 19 (18) Head and thorax dark orange-brown to black and at least moderately shiny. Pronotum not paler than mesoscutum. Neither mesoscutum nor scutellum with contrasting pale setae 20
 - Head and thorax usually orange or yellow, or, if dark then matt and without metallic reflections and with contrasting pale setae and pronotum distinctly paler than mesoscutum 22
- 20 (19) Eyes covered with numerous short hairs. Interantennal prominence not covered in dense white setae 21
 - Eyes naked. Interantennal prominence clothed in dense white setae **ARCHINUS** (p. 176)
- 21 (20) All funicle segments transverse, clava about as long as funicle. Top of antennal scrobes without carina. Legs completely yellow **BOTHRIOCRAERA** (p. 182)
 - All funicle segments longer than broad, clava much shorter than funicle (Fig. 143), top of antennal scrobes often with a distinct carina which runs transversely from eye to eye (as in Fig. 146). Legs darkened **ARHOPOIDIELLA** (p. 177)
- 22 (19) First two funicle segments anelliform, their combined lengths less than length of third which is more or less subquadrate as are remaining segments (Fig. 117) **AMEROMYZOBIA** (p. 172)
 - First two funicle segments not contrasting as greatly with other segments as above, each usually slightly smaller than the third 23
- 23 (22) Maxillary palpi two-segmented, labial palpi one-segmented **TIMBERLAKIA** (p. 233)
 - Maxillary palpi three- or four-segmented, labial palpi two-segmented 24
- 24 (23) Antenna more or less unicolorous, yellow or yellowish orange. Pronotum and mesoscutum usually concolorous **ACEROPHAGUS** (p. 169)
 - Antenna with clava white or yellowish white and contrasting with dark brown funicle segments, or, if these are white then with dark brown scape. Pronotum often distinctly paler than mesoscutum **PSEUDAPHYCUS** (p. 225)



Figs 170-179 170, 171, *Helmecephala* sp. ♂, (170) left antenna, outer aspect, (171) genitalia; 172, 173, *Helmecephala albisetosa* sp. n. ♀, (172) base of left forewing, upper surface, (173) genitalia; 174, 175, *Iceromyia flavifrons* sp. n. ♂, (174) left antenna, outer aspect, (175) left forewing venation; 176, *Iceromyia* sp. ♀, genitalia; 177-179, *Lirencyrtus primus* sp. n., (177) left antenna, outer aspect, ♀, (178) left forewing base, upper surface, ♀, (179) left antenna, outer aspect, ♂.

- 25 (8) Frontovortex with very conspicuous shiny-bottomed thimble-punctures. Forewing with stigmal vein arising before submarginal reaches wing margin (as in Fig. 86). Occipital margin sharp. Funicle segments at least as wide as pedicel, the first five longer than broad and with extremely short hairs. **LOCHITOENCYRTUS** (p. 209)
 - Combination of characters not as above 26
- 26 (25) Both mesoscutum and scutellum convex and with longitudinally strigose sculpture. Postmarginal vein shorter than stigmal (as in Fig. 163). Flagellum variable. Funicle seven-segmented with clava one- or two-segmented (Fig. 119) or funicle six-segmented with clava two- or three-segmented **DESOBIUS** (p. 192)
 - If both mesoscutum and scutellum have longitudinally strigose sculpture then scutellum flat or postmarginal vein longer than stigmal (Fig. 130). Flagellum with funicle always six-segmented, clava usually entire*. 27
- 27 (26) Funicle not unicolorate, with basal segments dark and apical segments white. Frontovortex narrow, not more than twice as broad as anterior ocellus. Forewing darkened with a transverse hyaline band in apical third **COMPERIA** (p. 189)
 - Combination of characters not as above 28
- 28 (27) Not all funicle segments longer than broad. 29
 - All funicle segments longer than broad 56
- 29 (28) Funicle with at least one segment with setae at least one and a half times as long as its diameter 30
 - Setae on funicle segments at most as long as diameter of funicle segments 31
- 30 (29) Tarsi four-segmented. Scutellum without tubercles or pits **ARRHENOPHAGUS** (p. 178)
 - Tarsi five-segmented. Scutellum with tubercles or pits (easy to see on cleared, slide mounted material) (as in Figs 98, 99) **FORCIPESTRICIS** (p. 196)
- 31 (29) Mid-tibial spur expanded at apex and sack-like (as in Fig. 61).
 Funicle consisting of two anelliform segments and four segments which are longer than broad **DESANTISELLA** (p. 191)
 - Mid-tibial spur normal, long and pointed at apex 32
- 32 (31) Wings shortened, not reaching apex of gaster. Body yellow. Notaular lines more or less complete **ECHTHROPLEXIELLA** (p. 194)
 - Wings fully developed, at least reaching apex of gaster 33
- 33 (32) Postmarginal vein longer than stigmal (as in Fig. 130) 34
 - Postmarginal vein not longer than stigmal 40
- 34 (33) First funicle segment at least slightly narrower than pedicel, at least some funicle segments as long as, or longer than broad **PARALEUROCERUS** (p. 219)
 - First funicle segment distinctly broader than pedicel, or, if not then all funicle segments transverse 35
- 35 (34) Frontovortex, above antennal scrobes, with coarser sculpture than below this point which is smooth and shiny, the area below the top of the antennal scrobes contrasting greatly in colour with the area above and also more shiny. Antennal torulus separated from mouth margin by distance equal to about its own length. Hairs on eyes generally short and inconspicuous 36
 - Frontovortex and area below top of antennal scrobes of similar sculpture and colour. Antennal torulus often separated from mouth margin by much less than its own length. Setae on eyes usually long and very conspicuous 37
- 36 (35) Sculpture of scutellum slightly coarser and more elongate (particularly in centre) than that on mesoscutum. Postero-lateral margins of mesoscutum not slightly raised and without smoother sculpture than rest of mesoscutum **ZAPLATYCERUS** (p. 235)

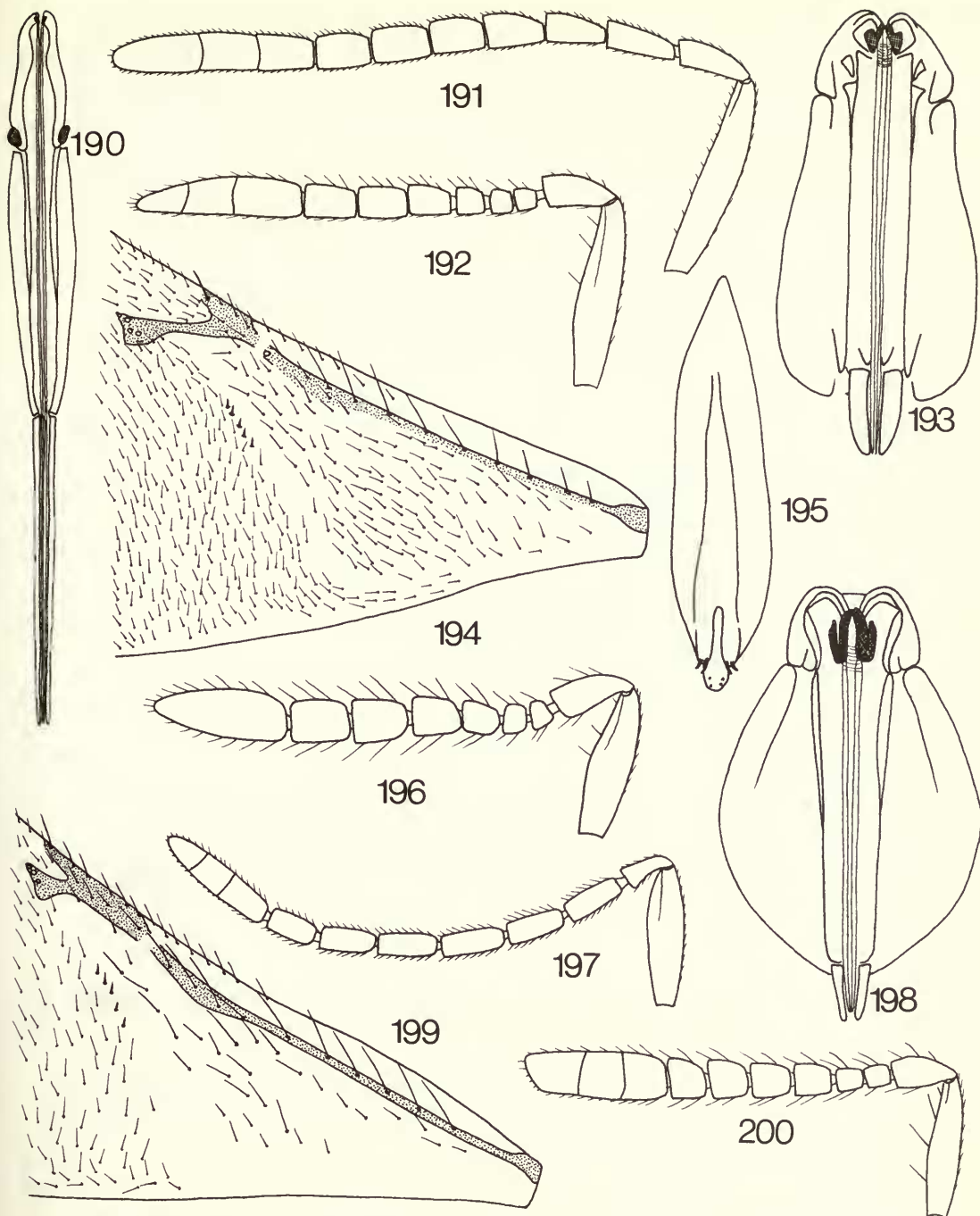
* Note added while this paper was in press. *Tachinaephagus* Ashmead has a seven-segmented funicle and scutellum which is smooth and shiny.



Figs 180–189 180, 181, *Lirencyrtus primus* sp. n., (180) genitalia, ♀, (181) genitalia, ♂; 182, 183, *Lohiella flaviclava* (Howard), ♀, (182) left antenna, outer aspect, (183) base of left forewing, upper surface; 184, 185, *Mariola flava* sp. n., ♀, (184) left forewing base, upper surface, (185) left antenna, outer aspect; 186–189, *Mucencyrtus insulanus* sp. n., (186) genitalia, ♂, (187) genitalia, ♀, (188) left antenna, outer aspect, ♂, (189) left antenna, outer aspect, ♀.

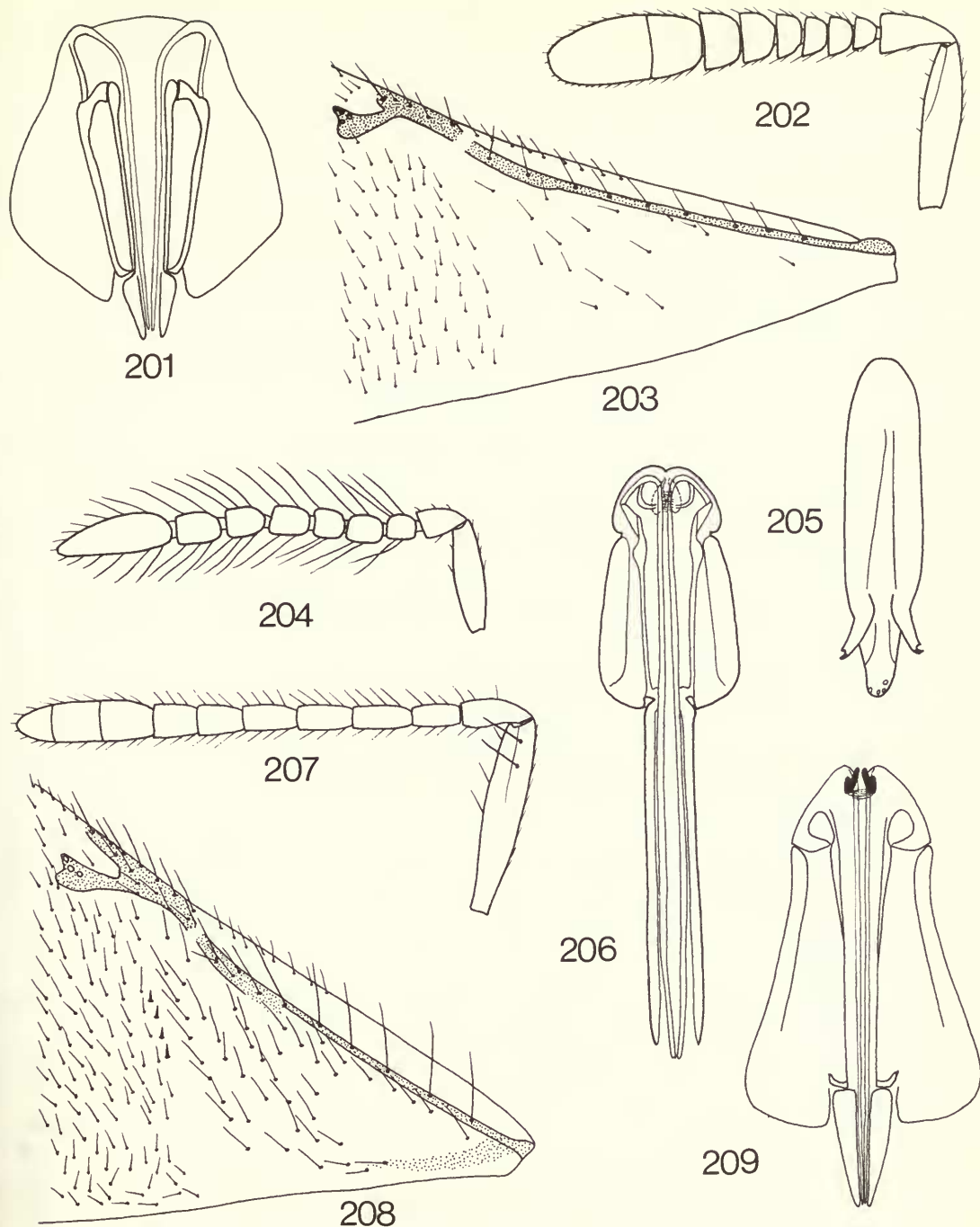
- Sculpture of scutellum more or less same as, or shallower than, on mesoscutum. Postero-lateral margins of mesoscutum slightly turned upwards and with slightly smoother sculpture (particularly on inner face) than rest of mesoscutum. **CHRYSOPLATYCERUS** (p. 185)
- 37 (35) Cerci in apical half of gaster **AEPTENCYRTUS** (p. 171)
– Cerci in basal half of gaster 38
- 38 (37) Posterior ocellus nearly touching margin of eye, separated by at most the diameter of a facet, also separated from occipital margin by distance slightly greater than from eye. Frontoververtex usually with distinct thimble-punctured sculpture . . . **AENASIUS** (p. 170)
– Posterior ocellus separated from eye margin by distance equal to diameter of at least two facets and often much closer to occipital margin than to eye. Frontoververtex never with thimble-punctured sculpture 39
- 39 (38) Posterior ocellus separated from occipital margin by about diameter of a facet or nearer occipital margin than eye margin. POL : OOL about 8 : 1 . . . **ZARHOPALUS** (p. 235)
– Posterior ocellus separated from occipital margin by about diameter of two facets and about equidistant from occipital and eye margins. POL : OOL about 6 : 1 . . . **COELASPIDIA** (p. 188)
- 40 (33) Base of scape with distinct spine (Fig. 120). Vertex at anterior ocellus abruptly raised much above dorsal level of eyes **COELOPENECYRTUS** (p. 189)
– Base of scape without spine. Vertex at anterior ocellus hardly raised above dorsal level of eyes 41
- 41 (40) Apical two-thirds of submarginal vein with a triangular expansion (as in Fig. 20) (mandibles bidentate, notaular lines indicated at anterior margin of mesoscutum) . . . **PAURIDIA** (p. 221)
– Submarginal vein without triangular expansion, or, if it is slightly thickened apically then notaular lines more or less complete or mandibles tridentate 42
- 42 (41)* Clava two-segmented, scutellum more or less flat, smooth and shiny **ZETETICONTUS** (p. 236)
– Clava entire, scutellum with clear sculpture and usually distinctly convex 43
- 43 (42) Mandibles unidentate or bidentate 44
– Mandibles tridentate or with one or two teeth and a truncation 46
- 44 (43) Notaular lines reaching one-third across mesoscutum. Frontoververtex at narrowest point at most one-third length of head width. Head and thorax mostly orange, clava and apical funicle segment white **CIRRHECYRTUS** (p. 187)
– Notaular lines completely absent. Frontoververtex at narrowest point at least about half length of head width. Head and thorax dark and metallic. Clava and funicle brown 45
- 45 (44) Frontoververtex and eyes with conspicuous long setae, frontoververtex at narrowest point about half length of head width. Propodeum medially at least one-sixth as long as scutellum (Fig. 121) **RHYTIDOTHORAX** (p. 226)
– Eyes naked and frontoververtex without conspicuous setae and very wide, at narrowest point well over three-fifths as wide as head. Propodeum medially at most one-eighth as long as scutellum **NEODUSMETIA** (p. 216)
- 46 (43) Clava obliquely truncate (Figs 122, 123) 47
– Clava apically rounded 50
- 47 (46) Notaular lines present and extending at least half way across mesoscutum 48
– Notaular lines completely absent or indicated at anterior margin of mesoscutum only. 49
- 48 (47) Marginal vein slightly longer than broad, postmarginal distinct (Fig. 125). Mesoscutum with notaular lines more or less reaching posterior margin (as in Fig. 1). **HOMALOTYLUS** (p. 203)

* Note added while this paper was in press. *Asitus* Erdős runs here but differs from other included genera in having an extremely flattened leaf-like body, a longitudinally divided pronotum and the forewing with the marginal fringe at least one-fifth as long as maximum width of wing.



Figs 190–200 190, 191, *Neapsilophrys flavipes* sp. n. ♀, (190) genitalia, (191) left antenna, outer aspect; 192–196, *Papaka confusor* sp. n., (192) left antenna, outer aspect, ♀, (193) genitalia, ♀, (194) left forewing base, upper surface, ♀, (195) genitalia, ♂, (196) left antenna, outer aspect, ♂; 197, 198, *Paramucrona brasiliensis* sp. n. ♀, (197) left antenna, outer aspect, (198) genitalia; 199, 200, *Protyn darichoides nigriceps* sp. n. ♀, (199) left forewing base, upper surface, (200) left antenna, outer aspect.

- Marginal vein punctiform or absent, postmarginal very short or absent (Fig. 124).
Notalar lines at most only reaching half way across mesoscutum **ISODROMUS** (p. 206)
- 49 (47) Head and thorax dark, metallic.
Scutellum with purple reflections contrasting with the green mesoscutum **LITOMASTIX** (p. 208)
- Head and thorax yellow or orange yellow, not metallic **BRETHESIELLA** (p. 183)
- 50 (46) Mesoscutum metallic green, scutellum convex and metallic green with strong purple reflections 51
- Mesoscutum and scutellum not as above, or, if metallic then scutellum flat 52
- 51 (50) Marginal vein punctiform, postmarginal absent (Fig. 126) **PENTALITOMASTIX** (p. 222)
- Marginal vein at least slightly longer than broad, postmarginal distinct, about half as long as stigmal **LITOMASTIX** (p. 208)
- 52 (50) Scutellum triangular in dorsal view, the sides more or less straight and with apex acute (Fig. 127), sculpture elongate and contrasting with shallower more polygonal sculpture of mesoscutum. Clava (in slide mounted material) with indications of being three-segmented. Mandibles with three acute teeth **BAEOENCYRTUS** (p. 180)
- Scutellum shield-shaped in dorsal view with sides and apex more or less rounded and occasionally with deep elongate sculpture. Clava without indications of segmentation. If scutellum is almost triangular in dorsal view then mandibles have upper tooth rudimentary. 53
- 53 (52) Thorax orange. Scutellum and posterior margin of pronotum with a few contrasting dark setae. Mandibles with third (upper) tooth rudimentary **CIRRHENCYRTUS** (p. 187)
- Thorax dark brown, or, if orange then without contrasting dark setae. Legs often with dark areas. Mandibles with three acute teeth or sometimes with upper tooth rudimentary (*Papaka*, as in Fig. 102) 54
- 54 (53) Frontovertex narrow, at narrowest point not more than about one-seventh of head width. Speculum not interrupted (Fig. 154) **CICOENCYRTUS** (p. 186)
- Frontovertex wider, at narrowest point at least about one-fifth of head width. Speculum sometimes interrupted by one to three lines of setae on dorsal surface of wing (Fig. 129) 55
- 55 (54) Mandibles with three acute teeth **METAPHYCUS** (p. 212)
- Mandibles with upper tooth rudimentary and not acute (as in Fig. 102) **PAPAKA** (p. 217)
- 56 (28) Head dark with several pale markings around antennal scrobes, eyes margined white, interantennal prominence with an inverted dark 'V' originating at the antennal toruli (as in Fig. 93) (setae on funicle about as long as the diameter of the funicle segments) **TACHARDIOBIUS** (p. 231)
- Not as above 57
- 57 (56) Head with at least three membranous lines, two longitudinal ones from about level with anterior ocellus along inner margins of the eyes and outer margins of scrobes to near antennal toruli, these being joined by a third transverse line along the top of the scrobes (Fig. 128, also cf. Fig. 95).
Body flattened, mandibles tridentate 58
- Head without such membranous lines. 59
- 58 (57) Setae on funicle not longer than diameter of funicle segments. Labial palpi one-segmented **SZELENYIOLA** (p. 231)
- Setae on funicle at least about twice as long as diameter of funicle segments. Labial palpi three-segmented. **AVETIANELLA** (p. 179)
- 59 (57) Funicle segments with longest setae at most equal to diameter of corresponding segment 60
- Funicle segments with at least setae longer (usually at least one and a quarter times as long) than diameter of corresponding segment 85



Figs 201–209 201, *Protyndarichoides nigriceps* sp. n. ♀, genitalia; 202–205, *Shenahetia masneri* sp. n., (202) left antenna, outer aspect, ♀, (203) left forewing base, upper surface, ♀, (204) left antenna, outer aspect, ♂, (205) genitalia, ♂; 206, *Shenahetia* sp. ♀, genitalia; 207, *Simmondsiella flaviptera* sp. n. ♀, left antenna, outer aspect; 208, 209, *Tetarticlava yoshimotoi* sp. n. ♀, (208) left forewing base, upper surface, (209) genitalia.

- 60 (59) Hind tibia distinctly bilaterally flattened, at most four times as long as broad (as in Fig. 64) **CARABUNIA** (p. 184)
 - Hind tibia not flattened, or, if slightly flattened then more than five times as long as broad 61
- 61 (60) Postmarginal vein at least slightly longer than stigmal (Figs 133, 135, 136). 62
 - Postmarginal vein not longer than stigmal 68
- 62 (61) Scutellum with a distinct apical tuft of setae. Mandibles without teeth **ENCYRTUS** (p. 195)
 - Scutellum without apical tuft of setae (occasionally a few longer setae at apex). Mandibles with at least one distinct tooth 63
- 63 (62) At least anterior three-quarters of mesoscutum with dark setae and longitudinally striate sculpture, posterior one-half to one-third of mesoscutum clothed in pale setae 64
 - Mesoscutum not with elongate sculpture, or if sculpture elongate then setae are entirely dark throughout 65
- 64 (63) Frontoververtex, particularly between ocelli, with coarse, regular, punctate sculpture. Sculpture in centre of mesonotum not, or hardly, longitudinally striate in contrast to that at sides which is very elongate **DIVERSINERVUS** (p. 193)
 - Frontoververtex with irregular, shallow, reticulate sculpture. Sculpture in centre of mesoscutum longitudinally striate, although not as strongly as that at sides **genus A** (p. 169)
- 65 (63) Stigmal vein very short, not as long as marginal (Fig. 130) **AGENIASPIS** (p. 171)
 - Stigmal vein very long and curved towards anterior margin of forewing or longer than marginal (Figs 133, 135, also cf. Fig. 53). 66
- 66 (65) Legs completely yellow. Forewings hyaline. Mandibles tridentate **MICROTERTYS** (p. 213)
 - Legs not completely yellow. Forewings often partially infusate. Mandibles not tridentate 67
- 67 (66) Marginal vein rather short, hardly twice as long as broad, costal cell dorsally with only a few setae at apex (Fig. 135). Posterior ocellus separated from eye margin by at least about twice its own diameter. Mandibles with one tooth and a broad truncation **PRIONOMASTIX** (p. 223)
 - Marginal vein at least about six times as long as broad, costal cell dorsally with a complete line of setae extending from base to apex along wing margin (as in Fig. 53). Posterior ocellus nearly touching eye margin. Mandibles bidentate **ERICYDNUS** (p. 195)
- 68 (61) Speculum interrupted in lower half by at least one line of setae on dorsal surface of wing (Fig. 129). Notaular lines indicated anteriorly or complete, clava never apically truncate. Marginal vein punctiform. Thorax never shiny, if dark then matt. Mandibles tridentate **METAPHYCUS** (p. 212)
 - Speculum not interrupted. Notaular lines absent except in *Homalotylus* where they are more or less complete (as in Fig. 1) and the clava is apically obliquely truncate (as in Fig. 123). 69
- 69 (68) Notaular lines more or less complete (as in Fig. 1). Clava apically obliquely truncate (as in Fig. 123) **HOMALOTYLUS** (p. 203)
 - Notaular lines absent. Clava apically rounded 70
- 70 (69) Clava two-segmented 71
 - Clava solid 73
- 71 (70) Mandibles with one tooth and a broad truncation (as in Fig. 91). Marginal vein punctiform. Frontoververtex broad, much broader than length of eye (eyes small). Length of hind tarsus rather longer than corresponding hind tibia (Fig. 132) **HUNTERELLUS** (p. 204)
 - Mandibles tridentate or with two teeth and a truncation. Marginal vein longer than broad. Frontoververtex narrower than the length of an eye. Length of hind tarsus shorter than length of corresponding hind tibia 72

- 72 (71) Scutellum smooth and shiny *ZETETICONTUS* (p. 236)
 – Scutellum with distinct sculpture.
 Clava entire but appearing two-segmented in dry mounted specimens 73
- 73 (70, 72) Mandibles without teeth. Apex of scutellum usually with a tuft of long setae *ENCYRTUS* (p. 195)
 – Mandibles with three acute teeth or with one or two teeth and a truncation. Apex of scutellum without tuft of setae 74
- 74 (73)* Mandibles with three acute teeth 75
 – Mandibles with one or two teeth and a truncation 81
- 75 (74) Marginal vein punctiform 76
 – Marginal vein at least twice as long as broad 78
- 76 (75) Thorax and head orange *MUCRENCYRTUS* (p. 213)
 – Thorax and head dark and metallic 77
- 77 (76) Dorsum of scutellum with deep longitudinally striate sculpture, contrasting with the much more shallow, polygonal sculpture of mesoscutum. Scutellum not very shiny (except at sides) and more or less dark purplish brown contrasting with the shiny green mesoscutum. Spur of mid tibia shorter than corresponding basitarsus *PARALITOMASTIX* (p. 219)
 – Dorsum of scutellum not with longitudinally striate sculpture and often quite shiny, occasionally purplish. Spur of mid tibia usually about as long or longer than corresponding basitarsus *COPIDOSOMA* (p. 189)
- 78 (75) Scutellum very convex with deep, rough striate sculpture. Apex of scutellum with very short, smooth, thin, leaf-like extension (as in Fig. 94) *AMAURILYMA* (p. 171)
 – If scutellum convex with deep striate sculpture then apex is without leaf-like extension 79
- 79 (78) Both mesoscutum and scutellum with very fine longitudinally striate-reticulate sculpture, anterior two-thirds of mesoscutum with dark setae, posterior one-third with pale setae *genus A* (p. 169)
 – Never both mesoscutum and scutellum with sculpture as above, mesoscutum occasionally with pale setae but these always evenly distributed 80
- 80 (79) Axillae distinctly raised above level of scutellum with posterior margin step-like, almost vertical and mirror shiny, mesoscutum often with conspicuous white setae *APSILOPHRYS* (p. 176)
 – Axillae hardly raised above level of scutellum and with posterior margin distinctly sculptured, mirror never shiny. Setae on mesoscutum dark 81
- 81 (74, 80) Marginal vein punctiform or only slightly longer than broad, usually as long or longer than stigmal, postmarginal generally not distinct and therefore shorter than marginal (as in Fig. 76). Posterior margin of mesoscutum produced backwards in middle third so that axillae appear to be widely separated (as in Fig. 77). Parasites of eggs of Lepidoptera, Hemiptera, etc. *OOENCYRTUS* (p. 217)
 – Marginal vein usually at least twice as long as broad, stigmal and postmarginal veins relatively long, or, if marginal punctiform then stigmal vein distinctly longer than marginal. Posterior margin of mesoscutum gently curved or with either side straight and centrally slightly angled so that axillae appear to meet or nearly meet centrally and are not greatly separated by posterior margin of mesoscutum, or, if as above then marginal vein is distinctly at least twice as long as broad 82
- 82 (81) Marginal vein punctiform and shorter than stigmal (as in Fig. 75). Funicle segments often flattened and broadened, much wider than pedicel. Parasites of Psyllid nymphs *PSYLLAEPHAGUS* (p. 226)
 – Marginal vein at least twice as long as broad and as long or longer than stigmal. Funicle segments cylindrical 83

* Note added while this paper was in press. *Boucekiella* Hoffer and *Platencyrtus* Ferrière run here but differ from other genera in having an extremely flattened leaf-like body. *Boucekiella* has the submarginal vein with a triangular expansion which is absent in *Platencyrtus*.

- 83 (82) Tegulae with at least base yellow or distinctly paler than apex (rarely completely dark).
Scutellum never with sculpture conspicuously deeper than that on mesoscutum **MICROTERTYS** (p. 213)
- Tegulae completely black or dark brown. Scutellum often with sculpture much deeper than that on mesoscutum 84
- 84 (83) At least outer face of scape distinctly paler (usually yellow) than flagellum (usually brown). Parasites of Coccoidea **TRICHOMASTHUS** (p. 234)
- Scape always as dark or darker than flagellum. Parasites of Syrphidae **SYRPHOPHAGUS** (p. 230)
- 85 (59) Wings shortened, not reaching apex of gaster 86
- Wings reaching apex of gaster 87
- 86 (85) Body flattened. Mandibles bidentate. Wing rudiments hyaline **RHOPUS** (p. 226)
- Body not flattened. Mandibles tridentate, the third (upper) tooth often truncate. Wing rudiments sometimes darkened **CHEILONEURUS** (p. 184)
- 87 (85) Mandibles without teeth. Apex of scutellum usually with a tuft of long setae. Clava entire. Stigmal vein longer than marginal, postmarginal as long or longer than stigmal **ENCYRTUS** (p. 195)
- Mandibles with from one to three acute teeth. Apex of scutellum usually without a tuft of setae, if tuft present then stigmal vein not longer than marginal and postmarginal shorter than stigmal (*Gahaniella* may have mandibles without teeth but clava two-segmented) 88
- 88 (87) Mandibles unidentate or bidentate 89
- Mandibles tridentate, with one or two teeth and a truncation, or without teeth 100
- 89 (88) Epipygium covering less than half dorsal surface of gaster. Neither sixth funicle segment nor clava with perpendicular sensilla. Speculum never interrupted 90
- Epipygium covering at least about two-thirds dorsal surface of gaster (Fig. 134), sixth funicle segment or clava usually with perpendicular sensilla (Fig. 131). Speculum usually interrupted in lower half by at least one line of setae on dorsal surface of wing (as in Figs 70, 71) (*Rhopus* may have shortened wings) 94
- 90 (89) Cerci in apical half of gaster **GONZALEZIA** (p. 197)
- Cerci in basal half of gaster 91
- 91 (90) Scutellum with tubercles or pits (as in Figs 98, 99) (these are best seen in cleared slide mounted material) **FORCIPESTRICIS** (p. 196)
- Scutellum without tubercles or pits 92
- 92 (91) Marginal vein punctiform or only very slightly longer than broad and postmarginal absent. Area between stigmal vein and anterior margin of wing completely naked. Propodeum short, medially at most one-eighth as long as scutellum **BRACHYPLATYCERUS** (p. 183), **HEMAENASIUS** (p. 202)
- Marginal vein distinctly longer than broad, postmarginal and stigmal veins relatively long. Area between stigmal vein and wing margin with several setae. Propodeum medially at least one-sixth as long as scutellum 93
- 93 (92) Centre of propodeum completely smooth or with only very light sculpture and apex of scutellum without distinct carina along its edge. Eyes with rather short inconspicuous setae. Mandibles rather broad with two teeth of almost equal length. **ASEIRBA** (p. 179)
- Centre of propodeum with distinct sculpture and apex of scutellum with carina along its margin (Fig. 121) (often indistinct or absent in those species with a smooth scutellum). Eyes usually with conspicuous setae. Mandibles narrow with teeth of unequal length, the upper being long and the lower very short or absent **RHYTIDOTHORAX** (p. 226)
- 94 (89) Body dorso-ventrally flattened (wings sometimes shortened) **RHOPUS** (p. 226)
- Body not flattened (wings always fully developed) 95
- 95 (94) Frontovertex and mesoscutum with sculpture punctate, giving it a silky or granulate appearance 96

- Frontoververtex and mesoscutum with shallow reticulate sculpture, often quite shiny 97
- 96 (95) Postmarginal vein longer than stigmal. Frontoververtex with regular, raised, polygonal sculpture *GYRANUSOIDEA* (p. 199)
- Postmarginal vein short, much shorter than stigmal. Frontoververtex with rather fine raised, irregular, sculpture *ANAGYRUS* (p. 173)
- 97 (95) Postmarginal vein at least one and a half times as long as stigmal. Longest cilia on hind wings at least half as long as maximum width of wing. Forewing usually with at least indications of two or three dark fasciae *LEPTOMASTIDEA* (p. 206)
- Postmarginal vein at most one and one third times as long as radial. Longest cilia on hind wings usually much less than half as long as maximum width of wing. Forewing completely hyaline 96
- 98 (97) Sculpture of scutellum deeper and coarser than on mesoscutum so that scutellum is noticeably less shiny than mesoscutum *APOANAGYRUS* (p. 176)
- Sculpture on scutellum not distinctly deeper and coarser than on mesoscutum so that scutellum is about as shiny as mesoscutum 99
- 99 (98) Postmarginal vein slightly shorter than stigmal *EXTROMATOPSIS* (p. 194)
- Postmarginal vein longer than stigmal *LEPTOMASTIX* (p. 206)
- 100 (88) Postmarginal vein longer than stigmal (Figs 130, 133, 175) 101
- Postmarginal vein not longer than stigmal 106
- 101 (100) Head with punctate sculpture and dorsum of thorax with very fine semi-striate sculpture which gives it a silky appearance. Speculum interrupted in its posterior half by a line of setae on dorsal surface of wing; first funicle segment hardly longer than pedicel, funicle with setae not much longer than diameter of corresponding segment. Head usually blue, thorax dorsally dark purplish brown *AGENIASPIS* (p. 171)
- Sculpture and coloration of head and thorax not as above. Speculum not interrupted. First funicle segment usually at least about twice as long as pedicel, funicle with much longer setae than above (except *Microterys*) 102
- 102 (101) Sculpture on scutellum elongate and arranged in a whorl-like pattern, distinctly deeper than that on mesoscutum, apex of scutellum sometimes with a tuft of setae. Tegulae brown 103
- Sculpture on scutellum not elongate or arranged in whorls, if much deeper than that on mesoscutum, then tegulae are yellow, apex of scutellum never with a tuft of setae 104
- 103 (102) Frontoververtex, particularly between ocelli and below anterior ocellus, with regular punctate sculpture. Posterior one-third of mesoscutum very slightly concave and often with pale setae in contrast to the anterior two-thirds which is convex and usually with dark setae *DIVERSINERVUS* (p. 193)
- Frontoververtex with irregular, slightly transversely elongate sculpture. Mesoscutum regularly convex and without pale setae *ICEROMYIA* (p. 204)
- 104 (102) Propodeum long, centrally at least one-sixth as long as scutellum and with sculpture centrally (as in Fig. 60). Apex of scutellum often produced as translucent flange (if scutellum convex then flange is absent or very indistinct). Eyes often very hairy. Frontoververtex and dorsum of thorax usually with thimble-punctured sculpture (often sparse). Setae on dorsal side of funicle usually about twice as long as those ventrally. Clava apparently two-segmented *HEMENCYRTUS* (p. 202)
- Propodeum centrally at most one-seventh as long as scutellum and smooth. Apex of scutellum never produced as a flange. Eyes naked or with short setae. Frontoververtex and thorax never with thimble-punctured sculpture. Setae on funicle the same length dorsally as ventrally. Clava entire 105
- 105 (104) Antennal torulus separated from mouth margin by much more than its own length. Head and thorax usually metallic green. Mandibles often with third upper tooth truncate. Tegulae often yellow or orange *MICROTERTYS* (p. 213)
- Antennal torulus separated from mouth margin by less than its own length. Head and thorax brown with some green, blue and purple reflections. Mandibles with three acute teeth. Tegulae dark brown *COCCIDOCTONUS* (p. 188)

- 106 (100) Clava two-segmented 107
 — Clava entire 109
- 107 (106) Scutellum smooth and shiny, except occasionally the basal two-thirds which may have
 thimble-punctured sculpture but apical one-third always smooth and shiny *ZETETICONTUS* (p. 236)
 — Scutellum with distinct sculpture, apical one-third never smooth or shiny 108
- 108 (107) Propodeum long, centrally at least one-sixth as long as scutellum and with distinct
 sculpture centrally (as in Fig. 60). Apex of scutellum often produced as a translucent
 flange. Eyes often very hairy. Frontovortex and dorsum of thorax usually with
 thimble-punctured sculpture (often sparse). Mandibles tridentate *HEMENCYRTUS* (p. 202)
 — Propodeum centrally at most one-seventh as long as scutellum and without sculpture.
 Apex of scutellum without flange. Eyes naked or with very short setae. Frontovortex
 and thorax usually with fine punctate sculpture, never thimble-punctured. Mandibles
 without teeth or with one tooth and a truncation *GAHANIELLA* (p. 197)
- 109 (106) Scutellum with tubercles or pits (as in Figs 98, 99) (best seen in cleared slide mounts).
 Frontovortex usually smooth and shiny and with setae. Eyes hairy *FORCIPESTRICIS* (p. 196)
 — Scutellum without tubercles or pits 110
- 110 (109) At least head and usually dorsum of thorax with thimble-punctured sculpture. If
 punctures indistinct then scutellum is flat and apically produced as a translucent
 flange 111
 — Head and dorsum of thorax without thimble-punctured sculpture and apex of scutellum
 not produced as a flange 113
- 111 (110) Marginal vein punctiform (as in Fig. 87). Thimble punctures on head and thorax deep
 and distinct. Scutellum convex without any indication of apical translucent flange *BOTHRIOTHORAX* (p. 182)
 — Marginal vein much longer than broad. Thimble-punctures on head and thorax often
 indistinct. Scutellum flat with distinct apical translucent flange, or convex with flange
 very narrow and indistinct or absent 112
- 112 (111) Frontovortex with shiny-bottomed piliferous punctures. Mandibles with two acute teeth
 and a truncation. Apex of scutellum without translucent flange *HELMECEPHALA* (p. 200)
 — Punctures on frontovortex not shiny-bottomed. Mandibles with three acute teeth. Apex
 of scutellum often produced as translucent flange (as in Fig. 60) *HEMENCYRTUS* (p. 202)
- 113 (110) Funicle without whorls of long setae. Setae less than twice as long as the diameter of
 corresponding segment 114
 — Funicle segments with whorls of long setae or setae which are at least twice as long as
 diameter of corresponding segment 124
- 114 (113) Marginal vein punctiform hardly longer than broad, postmarginal very short
 or absent (as in Fig. 76) *OOENCYRTUS* (p. 217)
 — Marginal vein at least about twice as long as broad, postmarginal distinct, occasionally
 nearly as long as stigmal 115
- 115 (114) Forewing darkened. Apex of scutellum with tuft of longer setae (sometimes indistinct or
 lost) *CHEILONEURUS* (p. 184)
 — Forewing hyaline, or, if darkened, then with a barely discernible longitudinal wedge-
 shaped mark arising at apex (similar to Fig. 57). Apex of scutellum without tuft of
 setae 116
- 116 (115) Submarginal vein of forewing with a triangular expansion in its apical one-third (Fig.
 138) (sometimes indistinct but always indicated by a conspicuous, long, erect seta).
 Forewing often with an indistinct longitudinal wedge-shaped fuscous streak arising at
 apex (similar to Fig. 57) *PARCETHRODRYINUS* (p. 221)
 — Submarginal vein of forewing without a triangular expansion, forewing without dark
 streak 117

- 117 (116) Tegulae with at least base yellow or paler than apex (rarely completely dark). Scutellum never with sculpture conspicuously deeper than mesoscutum . . . *MICROTERTYS* (p. 213)
 - Tegulae completely black or dark brown. Scutellum often with conspicuously deeper sculpture than mesoscutum 118
- 118 (117) Axillae with posterior face long and shiny. Propodeum centrally about one-sixth length of scutellum and with distinct sculpture medially (Fig. 140). Mesoscutum metallic green with purplish reflections anteriorly and covered with translucent hairs. Scutellum at base with deep, rough, irregular sculpture and with apical one-third highly polished (Fig. 140) *HELEGONATOPUS* (p. 200)
 - Axillae more or less level with scutellum, not with posterior face long and shiny. Propodeum shorter and smooth centrally. Mesoscutum not as above. Scutellum occasionally rough at base and shiny at apex (some *Trichomasthus* and *Echthrodryinus*) but usually with similar sculpture throughout. 119
- 119 (118) Outer face of scape usually much paler (normally yellow) than flagellum (normally brown). Parasites of Coccoidea *TRICHOMASTHUS* (p. 234)
 - Scape always about as dark or darker than flagellum. Not parasites of Coccoidea 120
- 120 (119) Axillae not touching apically, always separated by posterior margin of mesoscutum 121
 - Axillae more or less touching apically. 123
- 121 (120) Scutellum abruptly convex at sides and at apex, dorsally almost flat, never with punctate sculpture, usually with uniform sculpture. Scutellum (without axillae) at least slightly longer than broad *SYRPHOPHAGUS* (p. 230)
 - Scutellum uniformly convex, or flat dorsally, often with deep punctate sculpture with apical third of half smooth and shiny. Scutellum (without axillae) at most as long as broad 122
- 122 (121) Postmarginal vein long and distinct, half to nearly as long as stigmal. *ECHTHRODRYINUS* (p. 193)
 - Postmarginal vein very short or absent (as in Fig. 76) *OOENCYRTUS* (p. 217)
- 123 (120) Body usually not longer than 1 mm. Parasites of Aphidoidea *APHIDENCYRTUS* (p. 175)
 - Body usually longer than 1 mm. Parasites of Syrphidae *SYRPHOPHAGUS* (p. 230)
- 124 (113) Scutellum very convex and, at base, with several distinct longitudinal ridges running backwards from axillae (as in Fig. 74). Setae on dorsal side of funicle several times longer than those ventrally (Fig. 179) *LIRENCYRTUS* (p. 207)
 - Scutellum occasionally very convex but never with longitudinal ridges at base. Setae on funicle usually about the same length dorsally as ventrally 125
- 125 (124)* Propodeum centrally at least one-fifth as long as scutellum and with at least one longitudinal carina. Submarginal vein with triangular expansion in its apical one-third (Fig. 138) (often indistinct), forewing occasionally with fuscous wedge-shaped streak from apex to near centre (similar to Fig. 57). *PARECHTHRODRYINUS* (p. 221)
 - Propodeum shorter than one-sixth length of scutellum or, if longer then there are no distinct carinae. Submarginal vein usually without a triangular expansion, forewing never with fuscous wedge-shaped streak 126
- 126 (125) Mandibles with three acute teeth 127
 - Mandibles with one or two teeth and a truncation 137
- 127 (126) First funicle segment at most as long as pedicel 128
 - First funicle segment at least one and a half times as long as pedicel 131
- 128 (127) Scutellum flat and polished. Body slightly dorso-ventrally flattened 129
 - Either scutellum distinctly convex or flat with distinct sculpture. Body robust 130
- 129 (128) Stigmal vein as long as marginal and with stigma hardly wider than vein (Fig. 139). Head with strong sculpture which is distinct on genae *TANYENCYRTUS* (p. 231)

* Note added while this paper was in press. *Cerapterocerus* Westwood runs here but the submarginal vein of the forewing has a distinct subapical triangular expansion; it differs from *Parechthrodryinus* in having hyaline forewings and the scutellum with a thin apical flange which overhangs the propodeum centrally for over half its median length (*Parechthrodryinus* has no distinct apical flange on the scutellum).

- Stigmal vein shorter than marginal and with stigma enlarged, at least two and a half times as wide as stigmal vein at base (Fig. 137). Head with very weak sculpture so that genae are very smooth and shiny *SHENAHETIA* (p. 227)
- 130 (128) Scape at least three and a half times as long as broad *MERCETENCYRTUS* (p. 211)
- Scape at most three times as long as broad [*COCCIDENCYRTUS*] (p. 188)
- 131 (127) Forewing darkened *CHEILONEURUS* (p. 184)
- Forewing hyaline 132
- 132 (131) Head triangular in side view, the junction of the frontovertex and face forming an acute angle. Head orange, contrasting with dark brown thorax *ANICETUS* (p. 174)
- Head not triangular in side view, more or less gradually rounded. Head not contrasting so strongly with thorax 133
- 133 (132) Scutellum longitudinally striate with silky lustre *MERCETENCYRTUS* (p. 211)
- Scutellum not longitudinally striate with silky lustre 134
- 134 (133) Thorax and head dark and metallic. Mesoscutum with dark setae 135
- If thorax and head are dark and metallic then setae on mesoscutum are mostly white 136
- 135 (134) Scutellum, without axillae, slightly longer than wide or about as long as wide. Hind femur and tibia yellow, mid-tibial spur not shorter than corresponding basitarsus *ICEROMYIA* (p. 204)
- Scutellum, without axillae, slightly wider than long. Hind femur and tibia mostly brown, mid tibial spur shorter than corresponding basitarsus *AMMONOENCYRTUS* (p. 172)
- 136 (134) Thorax and head dark and metallic. Mesoscutum with contrasting pale setae *CHEILONEURUS* (p. 184), *PROCHILONEURUS* (p. 223)
- Thorax and head orange, with darker areas not dark and metallic *CHEILONEURUS* (p. 184)
- 137 (126) Body dorso-ventrally flattened. Scutellum flat, with punctate sculpture centrally and with a shiny, rounded border about as wide as one-quarter length of scutellum. Speculum often interrupted on dorsal surface of wing *COMPERIELLA* (p. 189)
- Body not dorso-ventrally flattened. Scutellum occasionally flat with punctate sculpture but border not smooth and shiny or, if so then sides are flat and not rounded. Speculum not interrupted 138
- 138 (137) Gaster only slightly longer than scutellum. First funicle segment at most only slightly longer than pedicel. Thorax not metallic, mesoscutum with dark setae. Mandibles with one tooth and a broad truncation *APHYCOMORPHA* (p. 175)
- Gaster at least one and a half times as long as scutellum. If first funicle segment is not at least twice as long as pedicel then mesoscutum is dark with at least a few white setae or the mandibles have two acute teeth with the third (upper) tooth truncate 139
- 139 (138) First funicle segment at most as long as pedicel 140
- First funicle segment longer than pedicel 141
- 140 (139) Scape at least three and a half times as long as broad *SYRPHOPHAGUS* (p. 230)
- Scape at most three times as long as broad [*COCCIDENCYRTUS*] (p. 188)
- 141 (139) Postmarginal vein absent or short, at most half as long as stigmal (as in Fig. 110). Mesoscutum dark with dark setae (may be orange in species not examined). Scutellum flat 142
- Postmarginal vein nearly as long or as long as stigmal. If mesoscutum dark then with at least a few contrasting white setae or scutellum convex 144
- 142 (141) Scutellum with steep, very flat, polished sides *NEOCOCCIDENCYRTUS* (p. 216)
- Sides of scutellum short and curved, occasionally shiny 143
- 143 (142) Scutellum with apex not shiny, never metallic green, legs usually yellow with one or two dark bands *COCCIDENCYRTUS* (p. 188)
- Scutellum with extreme apex metallic green, legs extensively darkened, never yellow with dark bands *GRISSELLIA* (p. 197)

- 144 (141) Forewing darkened or, if hyaline then thorax mostly orange. *CHEILONEURUS* (p. 184)
 - Forewing hyaline and thorax completely dark 145
- 145 (144) Setae on funicle not arranged in distinct whorls. Scutellum very convex with base sculptured and apical third shiny. Mesoscutum with numerous dark setae . . .
ECHTHRODRYINUS (p. 193)
 - Setae on funicle normally arranged in two or three distinct whorls per segment. Scutellum usually fairly flat, never very convex, and with uniform sculpture throughout or with sides and apex shiny. Mesoscutum usually with at least some appressed white setae 146
- 146 (145) Submarginal vein distinctly expanded in its apical two-thirds . . . *ZAOMMA* (p. 235)
 - Submarginal vein not expanded in its apical two-thirds . . . *CHEILONEURUS* (p. 184)

Notes on genera

Genus A

(Key couplets: ♀ 56; ♂ 64, 79)

This genus is being formally described in *Acta Zoologica Lilloana* by P. Fidalgo from San Miguel de Tucuman, Argentina. It is close to *Cheiloneurus*, *Diversinervus* and *Anicetus*, from which it can be separated using the characters given in the key.

ACEROPHAGOIDES Blanchard

(Key couplets: ♀ 27; ♂ 12. Fig. 20)

Acerophagoides Blanchard, 1940: 106. Type-species: *Acerophagoides triangularis* Blanchard, by monotypy.

INCLUDED SPECIES. One: *triangularis* Blanchard (De Santis, 1964: 104); also one unidentified species from Trinidad (BMNH).

DISTRIBUTION. Argentina, Trinidad.

BIOLOGY. Reared from Eriococcidae (Homoptera).

COMMENTS. Compere & Annecke (1960: 381) correctly placed the genus near *Pauridia* Timberlake (tribe Pauridiini), from which it differs in the number of funicle segments and dentition of mandibles (the third tooth of *Acerophagoides* being nearer the apex of the mandible than in *Pauridia*). Also examined is a single specimen from Trinidad (BMNH) with only four funicle segments.

ACEROPHAGUS Smith

(Key couplets: ♀ 19; ♂ 24)

Acerophagus Smith, 1880: 83. Type-species: *Acerophagus coccois* Smith, by monotypy.

Rhopoideus Howard, 1898b: 235. Type-species: *Rhopoideus citrinus* Howard, by monotypy.

INCLUDED SPECIES. Fourteen, eight from the Neotropics: *coccois* Smith, *debilis* Timberlake, *flavus* Rosen, *luteolus* Rosen, *notativentris* (Girault), *nubilipennis* Dozier, *pallidus* Timberlake and *texanus* (Howard).

REFERENCE. World revision: Rosen (1969).

DISTRIBUTION. Mexico, Trinidad, Jamaica, Puerto Rico. World: New World.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Very close to *Pseudaphycus* and *Timberlakia* (tribe Aphycini, subtribe Aphycina) from which it can be separated using the characters given in the key.

ACROASPIDIA Compere & Zinna

(Key couplet: ♀ 34. Fig. 17)

Acroaspidia Compere & Zinna, 1955: 96. Type-species: *Acroaspidia myrmicoides* Compere & Zinna, by monotypy.

INCLUDED SPECIES. One: *myrmicoides* Compere & Zinna (1955: 98).

DISTRIBUTION. Trinidad.

BIOLOGY. Parasite of Pseudococcidae (Homoptera).

COMMENTS. Trjapitzin (1973a) places the genus in the tribe Acroaspidiini which includes *Aeptencyrtus* and *Pelmatencyrtus*. Kerrich's (1978) interpretation is broader and places it in the subtribe Dinocarsiina which also includes *Zarhopalus*, *Chrysoplatycerus*, *Hambletonia* and *Zaplatycerus*. It can be easily separated from these genera and also from *Cheiloneurus*, which it superficially resembles, using the characters given in the key.

ADELENCYRTUS Ashmead

(Key couplets: ♀ 88, 243; ♂ 7. Fig. 46)

Adelencyrtus Ashmead, 1900: 401. Type-species: *Encyrtus chionaspidis* Howard, by original designation. *Epiencyrtoides* Girault, 1915d: 108. Type-species: *Epiencyrtoides quadridentatus* Girault, by original designation.

Rotrencyrtus Risbec, 1958: 39. Types-species: *Rotrencyrtus depressus* Risbec, by monotypy.

INCLUDED SPECIES. Twenty-five, three from the Neotropics: *aulacaspidis* (Brèthes), *moderatus* (Howard) and *odonaspidis* Fullaway; also one unidentified species from Trinidad (BMNH).

REFERENCES. World key: Compere & Annecke (1961), see also Noyes (1979).

DISTRIBUTION. Throughout Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. Placed in the tribe Habrolepidini, subtribe Habrolepidina by Trjapitzin (1973b) which includes other genera which have quadridentate mandibles and, in the female, the head triangular in side view. The female can be separated from the included genera using the characters given in key. The males of this subtribe all have a two-segmented funicle and a long unsegmented clava and are extremely difficult to separate. A key to genera included in this subtribe is also given by Tachikawa & Valentine (1969).

AENASIUS Walker

(Key couplets: ♀ 63, 144; ♂ 7, 38. Figs 62, 113)

Aenasius Walker, 1846: 181. Type-species: *Encyrtus hyettus* Walker, by monotypy.

INCLUDED SPECIES. Twenty-seven, 26 being found in the Neotropics: *acuminatus* Kerrich, *advena* Compere, *bolowi* Mercet, *brasiliensis* (Mercet), *brethesi* De Santis, *caeruleus* Brues, *cariocus* Compere, *chapadae* Ashmead, *connectens* Kerrich, *flandersi* Kerrich, *frontalis* Compere, *hyettus* Walker, *insularis* Compere, *longiscapus* Compere, *maplei* Compere, *masii* Domenichini, *pacificus* Compere, *paulistus* Compere, *personatus* Kerrich, *phenacocci* Bennett, *punctatus* Compere, *regularis* Kerrich, *similis* Kerrich, *tachigaliae* (Brues), *vadosus* Kerrich and *vexans* Kerrich; also a further seven or eight undescribed species (BMNH).

REFERENCE. Revision: Kerrich (1967).

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

DISTRIBUTION. Throughout the Neotropics. World: Nearctic region, Africa, India.

COMMENTS. Kerrich (1967) did not deal with *Aenasius bolowi* Mercet since at that time the type had not been located. Since then the type has been found in Mercet's collection and is being dealt with in a paper on Mercet's encyrtid types by the present author. The species is very close to *regularis* and *similis*, but differs in the scape bulging outwards at the apex, the top of the antennal scrobes lacking a keel or carina and the outer margin of the forewing being slightly concave.

Placed in the tribe Rhinoencyrtini, subtribe Aenasiina which also includes *Chalcaspis*, from which it can be separated using the characters given in the key.

***AEPTENCYRTUS* De Santis**

(Key couplets: ♀ 32; ♂ 37)

Aeptencyrtus De Santis, 1964: 119. Type-species: *Pheidoloxenus bruchi* De Santis, by monotypy.

INCLUDED SPECIES. One: *bruchii* (De Santis, 1964: 119).

DISTRIBUTION. Argentina, Trinidad, St Vincent.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. See under *Acroaspida*.

***AGENIASPIS* Dahlbom**

(Key couplets: ♀ 219; ♂ 65, 101. Fig. 130)

Ageniaspis Dahlbom, 1857: 293. Type-species: *Encyrtus fuscicollis* Dalman, by designation of Ashmead (1904: 303).

INCLUDED SPECIES. Six, one from the Neotropics: *fuscicollis* (Dalman, 1820: 359; De Santis, 1964: 312).

DISTRIBUTION. Argentina. World: cosmopolitan.

BIOLOGY. Polyembryonic parasites of larvae of Yponomeutidae (Lepidoptera).

COMMENTS. Placed in the tribe Copidosomatini, subtribe Ageniaspidiina which also includes *Paraleurocerus* and *Holcothorax* Mayr. It can be separated from *Holcothorax* (not known from South America) in having a six-segmented funicle (*Holcothorax* has five) and from *Paraleurocerus* by the characters given in the key. It is very close to *Paraleurocerus* and may eventually be considered synonymous.

***AMAUURILYMA* Graham**

(Key couplets: ♀ 190, 253; ♂ 78. Figs 94, 106, 156–158)

Amaurilyma Graham, 1958: 153. Type-species: *Encyrtus brevicornis* Dalman, by monotypy.

INCLUDED SPECIES. Three, none of which is found in the Neotropics, but at least one undetermined species from South America (BMNH; CNC, Ottawa; USNM, Washington).

DISTRIBUTION. Trinidad, Jamaica, Brazil. World: Palaearctic and Ethiopian regions.

BIOLOGY. Unknown.

COMMENTS. The material from each of the three countries mentioned above may belong to three distinct species since there are differences in the proportions of the antennal segments, sculpture of the propodeum and colour of the legs. I have also examined one specimen, which obviously belongs to this genus, from Zimbabwe (Rhodesia).

I am unable to place this genus according to Trjapitzin's (1973b) classification of the Encyrtidae. However, the genus does seem to be closely related to *Desobius*, but can be separated using the characters given in the key.

AMEROMYZOBIA Girault

(Key couplets: ♀ 15; ♂ 22. Figs 14, 117)

Ameromyzobia Girault, 1916b: 232. Type-species: *Ameromyzobia aphelinoides* Girault, by monotypy.

INCLUDED SPECIES. Two: *aphelinoides* Girault, 1916b: 233 and *bulyginskayae* Trjapitzin, 1971c: 290; also one, probably undescribed, species from Brazil (BMNH).

DISTRIBUTION. St Vincent, Trinidad, Cuba. World: U.S.A., Florida (one undetermined species, BMNH).

BIOLOGY. Reared from *Diaspis* sp. (Homoptera: Diaspididae) on grass in Trinidad (BMNH).

COMMENTS. Both of the described species and that found in Florida are very close and in fact may be a single species. The genus appears to be related to those included in the tribe Aphycini, subtribe Paraphycina, e.g. *Metaphycus*.

AMMONOENCYRTUS De Santis

(Key couplets: ♀ 49; ♂ 135. Fig. 22)

Ammonoencyrtus De Santis, 1964: 376. Type-species: *Cerapterocerus bonariensis* Brèthes, by monotypy.

INCLUDED SPECIES. Two, one from the Neotropics: *bonariensis* (Brèthes; De Santis, 1964: 378); also one undescribed species from Trinidad (BMNH) which appears to differ from both described species in the form of the antennae.

REFERENCE. Revision: Annecke (1967: 159–160).

DISTRIBUTION. Argentina, Brazil, Chile, Trinidad. World: Nearctic region.

BIOLOGY. Parasites of Coccidae (Homoptera).

COMMENTS. Placed in the tribe Cerapterocerini which includes *Anicetus* and *Homosemion*; it can be separated from these genera using the characters given in the key. Annecke (1967) includes a key to separate all other genera included in this tribe as well as a few superficially similar genera.

ANABROLEPIS Timberlake

(Key couplets: ♀ 59, 123; ♂ 7. Figs 33, 111)

Anabrolepis Timberlake, 1920b: 431. Type-species: *Anabrolepis extranea* Timberlake, by original designation.

INCLUDED SPECIES. Five, one species (? *zetterstedti* (Westwood)) apparently recorded from Bermuda (F. D. Bennett, *in litt.*).

REFERENCE. World review: Tachikawa (1955).

DISTRIBUTION. Bermuda. World: Nearctic region, Palearctic region, Pacific Islands, North Africa.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. I have not seen any material of this genus from South America and it may be that the record from Bermuda is actually of an *Adelencyrtus*. It is possible that *Anabrolepis* does occur in the Neotropical region and for that reason I have left it in the key.

The genus is included in the tribe Habrolepidini, subtribe Habrolepidina and can be separated from other included genera by characters given in the key and also in a key given by Tachikawa & Valentine (1969).

ANAGYRUS Howard

(Key couplets: ♀ 44, 52, 70, 114, 148, 158; ♂ 96. Figs 40, 70, 71, 131, 134)

Anagyrus Howard in Howard & Ashmead, 1896: 638. Type-species: *Anagyrus greeni* Howard, by monotypy.*Heterarthrellus* Howard, 1898b: 239. Type-species: *Heterarthrellus australiensis* Howard, by monotypy.*Epidinocarsis* Girault, 1913b: 83. Type-species: *Epidinocarsis tricolor* Girault, by monotypy.*Paranusia* Brèthes, 1913: 102. Type-species: *Paranusia bifasciata* Brèthes, by monotypy. **Syn. n.***Philoponectroma* Brèthes, 1913: 104. Type-species: *Philoponectroma pectinatum* Brèthes, by monotypy.**Syn. n.***Gyranusia* Brèthes, 1920: 137. Type-species: *Gyranusia porteri* Brèthes, by monotypy. **Syn. n.***Gyranusa* Mercet, 1921: 123. Type-species: *Gyranusa matritensis* Mercet, by original designation.*Protanagyrus* Blanchard, 1940: 115. Type-species: *Protanagyrus aciculatus* Blanchard, by monotypy.*Xiphomastix* De Santis, 1972b: 45. Type-species: *Xiphomastix bellator* De Santis, by original designation.

INCLUDED SPECIES. One hundred and thirty-two, 19 from the Neotropics: *aciculatus* (Blanchard), *ananaitis* Gahan, *antoninae* Timberlake, 1920: 409, *bellator* (De Santis, 1972b: 46), *bifasciatus* (Brèthes) (**comb. n.**), *brevistigma* De Santis, *chilensis* Brèthes, 1916a: 8, *coccidivorus* Dozier, 1932: 8, *diversicornis* Mercet, 1921: 134, *graminicolens* Dozier, 1937: 123, *insolitus* (Howard; Noyes, 1979: 145), *jucundus* De Santis, *nigriceps* (De Santis, 1972b: 46), *porteri* (Brèthes) (**comb. n.**), *pseudococci* (Girault, 1915b: 185), *pulchricornis* (Howard; Noyes, 1979: 146), *saccharicola* Timberlake, 1932: 159, *tanystis* De Santis, *terebratus* (Howard; Noyes, 1979: 87); also at least a further 10 undescribed species from Trinidad, Brazil, Panama and Colombia (BMNH; CNC, Ottawa).

REFERENCES. South America: De Santis (1964). World: Peck (1963: 335).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera). Some species in Australia are parasites on coccinellid larvae (Coleoptera) which produce a waxy secretion and are predatory on mealybugs, e.g. *Anagyrus australiensis* (Howard).COMMENTS. I have examined specimens (syntypes?) of *Paranusia bifasciata* Brèthes and these belong to the group of species previously placed under *Gyranusa* (which is considered by some authors to be a good genus). I have not examined the types of *Philoponectroma pectinatum* Brèthes or *Gyranusia porteri* Brèthes but since De Santis (1950: 54, 60) synonymized the genera with *Paranusia*, they are here treated as synonyms of *Anagyrus*.

Two species, *nigriceps* and *terebratus*, and a further species from Panama (CNC, Ottawa) (which runs in the ♀ key to *Apoanagyrus*, couplet 159), belong to a group with a smooth, shiny, frontovertex. According to present understanding of the group of genera to which *Anagyrus* belongs (subtribe Anagyrina), these three species could be considered as belonging to an undescribed genus. I am not convinced of this and therefore a new genus is not described here to accommodate them. Indeed, the generic limits of the genera belonging to this group, e.g. *Anagyrus*, *Anathrix*, *Apoanagyrus*, *Gyranusoidea*, *Leptomastix*, *Pseudleptomastix*, etc., are in some cases very difficult to define and it may be possible that further study and new material may show that some ought to be considered synonymous.

ANARHOPUS Timberlake

(Key couplets: ♀ 10; ♂ 3. Figs 10, 112)

Anarhopus Timberlake, 1929: 15. Type-species: *Anarhopus sydneyensis* Timberlake, by monotypy.INCLUDED SPECIES. One: *sydneyensis* Timberlake (1929: 18).

DISTRIBUTION. Trinidad. World: Nearctic region, Australia.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. I have not seen any South American specimens of this genus but, according to De Santis (*in litt.*), it has been found (?introduced) in Trinidad.

Placed in the tribe Tetracnemini, subtribe Arhopoideina, which also includes *Tetracnemoidea* from which it can be separated using the characters in the key.

ANATHRIX Burks

(Key couplets: ♀ 114, 131, 159)

Anathrix Burks, 1952: 179. Type-species: *Anathrix argyrus* Burks, by monotypy.

Aglyptoideus De Santis, 1964: 99. Type-species: *Aglyptoideus rusticus* De Santis, by monotypy. **Syn. n.**

INCLUDED SPECIES. Four, one from the Neotropics: *rustica* (De Santis, 1964: 101) (**comb. n.**).

REFERENCE. Review: Myartseva (1977a).

DISTRIBUTION. Argentina. World: Nearctic and Palaearctic regions.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Anagyrini, subtribe Anagyrina. See comments under *Anagyrus*.

ANDINOENCYRTUS Blanchard

(Key couplet: ♀ 222)

Andinoencyrtus Blanchard, 1940: 106. Type-species: *Andinoencyrtus ocellatus* Blanchard, by monotypy.

INCLUDED SPECIES. One: *ocellatus* Blanchard (De Santis, 1964: 276).

DISTRIBUTION. Argentina.

BIOLOGY. Parasites of Eriococcidae (Homoptera).

COMMENTS. I have examined the syntypes of this species. They are mounted under a single coverslip on a slide and are very badly crushed and distorted, but it is apparent that De Santis' (1964) redescription of the genus is slightly incorrect in that the marginal vein is actually slightly longer than broad and not as transverse as in his figure 135. It is probable that the cheeks are not subparallel but of more normal form, even though the cheeks of one syntype appear to be more or less parallel; this is very probably due to the head being distorted when it was squashed by the coverslip.

Andinoencyrtus is the sole genus included in the tribe Andinoencyrtini.

ANICETUS Howard

(Key couplets: ♀ 46; ♂ 132. Fig. 30)

Anicetus Howard in Howard & Ashmead, 1896: 639. Type-species: *Anicetus ceylonensis* Howard, by monotypy.

Asteropaeus Howard, 1898b: 231. Type-species: *Asteropaeus primus* Howard, by monotypy.

Habrolepopterygis Girault, 1915d: 86. Type-species: *Habrolepopterygis felix* Girault, by monotypy.

Krishnieriella Mani, 1935: 421. Type-species: *Krishnieriella ceroplastodis* Mani, by monotypy.

INCLUDED SPECIES. Twenty-six, three from the Neotropics: *annulatus* Timberlake, *primus* (Howard) and *quintanai* De Santis.

REFERENCE. World revision: Annecke (1967: 105–130).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan, except more northern latitudes (40° +).

BIOLOGY. Parasites of Coccidae (Homoptera).

COMMENTS. Placed in the tribe Cerapterocerini. See comments under *Ammonoencyrtus*.

ANUSIOPTERA Brues

(Key couplet: ♀ 121. Fig. 66)

Anusioptera Brues, 1910: 83. Type-species: *Anusioptera aureocincta* Brues, by monotypy.

INCLUDED SPECIES. One, *aureocincta* Brues, 1910: 83.

DISTRIBUTION. Mexico.

BIOLOGY. Probably parasitic on Pseudococcidae (Homoptera).

COMMENTS. The holotype female of *aureocincta* is in good condition except that it is lacking the left antenna and right clava.

The genus very probably belongs to the tribe Anagyrini, subtribe Leptomastideina.

APHIDENCYRTUS Ashmead

(Key couplets: ♀ 259; ♂ 123)

Aphidencyrtus Ashmead, 1900: 398. Type-species: *Encyrtus aphidiphagus* Ashmead, by original designation.

INCLUDED SPECIES. Twenty-eight, two from the Neotropics: *aphidivorus* (Mayr, 1876: 712, 713 & 724) and *brasiliensis* Ashmead (1904a: 497); also one unidentified species from St Vincent (BMNH).

REFERENCE. Key to Palaearctic species: Hoffer (1970: 78–79).

DISTRIBUTION. Argentina, Brazil, Chile, Peru, Puerto Rico, St Vincent. World: cosmopolitan.

BIOLOGY. Parasites of Aphididae (secondary or primary) and in other parts of the world of Psyllidae (Homoptera).

COMMENTS. I have not seen the type of *brasiliensis* but from the description it is very probably incorrectly placed in this genus. *Psyllaephagus trellesi* may be an *Aphidencyrtus*, but the wing venation and colour of the mesoscutum point to it being a *Psyllaephagus*. The types of this species are badly mounted on slides.

Placed in the tribe Microteriyini, subtribe Syrphophagina, which also includes *Syrphophagus* Ashmead. The two genera are extremely close and sometimes impossible to separate unless the biology is known. In general specimens of *Aphidencyrtus* are smaller than *Syrphophagus*, but this is only a reflection of the size of the host. Possibly the two genera ought to be synonymized.

APHYCOMASTIX De Santis

(Key couplet: ♀ 12)

Aphycomastix De Santis, 1972b: 49. Type-species: *Aphycomastix annulata* De Santis, by monotypy.

INCLUDED SPECIES. One: *annulata* De Santis, 1972b: 49.

DISTRIBUTION. Argentina, Brazil.

BIOLOGY. Unknown.

COMMENTS. I am unable to place this genus according to Trjapitzin's classification except to say that it belongs to the Encyrtinae, possibly the tribe Aphycini, and may be close to *Cyderius*.

APHYCOMORPHA Timberlake

(Key couplets: ♀ 106, 135, 210; ♂ 138)

Aphycomorpha Timberlake, 1919b: 225. Type-species: *Aphycomorpha araucariae* Timberlake, by monotypy.

INCLUDED SPECIES. Two, one from the Neotropics: *araucariae* Timberlake, 1919b: 227.

DISTRIBUTION. Mexico. World: Hawaii, New Zealand.

BIOLOGY. Parasites of Diaspididae and Eriococcidae (Homoptera).

COMMENTS. Placed in the tribe Aphycini by Trjapitzin (1973b).

APOANAGYRUS Compere

(Key couplets: ♀ 69, 159; ♂ 98)

Apoanagyrus Compere, 1947: 18. Type-species: *Apoanagyrus californicus* Compere, by monotypy.

INCLUDED SPECIES. Seven, five of which occur in the Neotropics: *diversicornis* (Howard; Noyes, 1979: 148), *lopezi* De Santis, 1964: 74, *malenotus* (De Santis, 1972b: 44) (**comb. n.** from *Leptomastix*), *montivagus* (De Santis, 1964: 86) (**comb. n.** from *Leptomastix*) and *trinidadensis* Kerrich, 1953: 792, also two further species being described by Dr G. J. Kerrich in a paper in preparation.

DISTRIBUTION. Throughout the Neotropics. World: Nearctic and Palaearctic regions.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. It is possible that both *malenotus* and *montivagus* are merely colour forms of *diversicornis*.

Placed in the subtribe Anagyrina. See comments under *Anagyrus*.

APSILOPHRYS De Santis

(Key couplets: ♀ 155; ♂ 80. Fig. 65)

Apsilophrys De Santis, 1964: 296. Type-species: *Copidosoma oeceticola* De Santis, by monotypy.

Copidencyrtus De Santis, 1964: 304. Type-species: *Copidencyrtus gracilis* De Santis, by monotypy. **Syn. n.**

INCLUDED SPECIES. Three, all from the Neotropics: *capsicum* (Burks, 1967: 54) (**comb. n.** from *Copidosoma*), *gracilis* (De Santis, 1964: 305) (**comb. n.**) and *oeceticola* De Santis (1964: 296); in addition two further unidentified species from Peru and Brazil (BMNH).

DISTRIBUTION. Argentina, Brazil, Peru, Trinidad, Puerto Rico.

BIOLOGY. Polyembryonic parasites of larvae of Gelechiidae (Lepidoptera).

COMMENTS. I have examined the holotype of *Copidencyrtus gracilis*; it is a male and belongs to *Apsilophrys*. I have not seen the holotype of *Copidosoma capsicum* but specimens which fit the description of the species and are reared from the same host and locality as the holotype undoubtedly belong to *Apsilophrys*.

Apsilophrys is very close to *Copidosoma* (Copidosomatini) but can be separated using the characters given in the key.

ARCHINUS Howard

(Key couplets: ♀ 17; ♂ 20)

Archinus Howard, 1897: 154. Type-species: *Archinus occupatus* Howard, by monotypy.

INCLUDED SPECIES. One: *occupatus* Howard (Noyes, 1979: 149).

DISTRIBUTION. Grenada, Trinidad.

BIOLOGY. Unknown.

COMMENTS. See Noyes (1979: 148–149).

ARHOPOIDIELLA gen. n.

(Key couplets: ♀ 18; ♂ 21. Figs 143–148)

Type-species: *Arhopoidiella carinata* sp. n.

♀. *Head*. In side view, moderately deep and most rounded at level of top of antennal scrobes, sometimes abruptly angled at this point, frontovertex slightly convex. Eyes slightly longer than broad, with conspicuous pubescence, overreaching occipital margin which is more or less sharp. Malar space about half length of eye with malar sulcus present. Frontovertex about one-third head width; posterior ocellus separated from occipital margin by slightly more than, to twice as much as its diameter and from eye margin by about half its diameter, ocelli forming an acute angle. Antennal scrobes deep, meeting dorsally and reaching about two-thirds from antennal toruli to anterior ocellus, top of scrobes sometimes with a transverse carina which almost reaches inner eye margins; antennal torulus separated from mouth margin by about half its length and from other torulus by about one and a half times its length, top of torulus below level of lower eye margin; scape subcylindrical and stout, pedicel conical and longer than first funicle segment, funicle five-segmented, all segments longer than broad and cylindrical, clava three-segmented, pointed apically and about as wide as funicle, longitudinal sensilla on all flagellar segments. Frontovertex with coriaceous or punctate sculpture, the latter giving it a granulate appearance, below top of antennal scrobes more shallow and elongate and almost alutaceous on genae. Frontovertex with a few short setae, those on interantennal prominence longer. Mandibles with three acute teeth, the middle tooth slightly longest, maxillary palpi three-segmented, labial palpi three-segmented.

Thorax. In side view, moderately deep and dorsally quite flat. Mesoscutum without notaular lines, about a half broader than long, axillae slightly separated by posterior margin of mesoscutum, scutellum about as long as broad and with apex pointed, propodeum medially short, less than one-eighth as long as scutellum. Pronotum and mesoscutum with shallow alutaceous sculpture, which is slightly deeper on scutellum where it is centrally of smaller mesh, mesopleura with similar sculpture, but more elongate anteriorly and tending towards punctate posteriorly, propodeum with irregular very shallow sculpture. Forewing hyaline, slightly more than three times as long as broad, basal cell sparsely hairy and completely naked in proximal one-third, speculum not interrupted and open; submarginal vein slightly expanded towards apex and with an apical hyaline break, marginal vein about twice as long as broad, stigmal vein about twice as long as marginal or post-marginal veins. Hindwing about three and a half times as long as broad. Mid tibial spur slightly shorter than corresponding basal tarsal segment.

Gaster. Slightly shorter than thorax, cerci in basal one-third, apex of hypopygium reaching to about two-thirds along gaster or to apex and slightly incised, paratergites absent. Ovipositor protruding, exerted part equal to about one-quarter to one-third length of gaster or from one-quarter to one-half as long as mid tibia; ovipositor about twice as long as mid tibia, gonostyli slightly longer than half length of mid tibia.

♂. Similar to female except clava entire. Aedeagus about two-thirds as long as mid tibia and each digitus with one thick spine apically.

***Arhopoidiella carinata* sp. n.**

(Figs 143–148)

♀. Length (excluding ovipositor) 1.00–1.27 mm (holotype 1.06 mm).

Colour. Body generally black with weak metallic green reflections, frontovertex slightly paler; antennae testaceous to dark brown except scape and pedicel which may be darker, occasionally terminal funicle segments and clava slightly paler; legs dark brown except tarsi and apices of tibiae which are testaceous or yellow, occasionally fore tibia and tarsus completely brown; ovipositor sheaths brown.

Head. In profile sharply angled at top of antennal scrobes which have a transverse carina extending across width of frontovertex at this point (Fig. 146); posterior ocellus separated from occipital margin by slightly more than its own diameter, ocelli forming an angle of about 60°. Sculpture of frontovertex punctate so that it has a granulate appearance. Relative measurements of head of holotype: maximum head width 62, width of frontovertex across median ocellus 16.5, malar space 20, eye length 39, eye width 34, POL 7, OOL 2, length of scape 32, other proportions of antenna as in Figure 145.

Thorax. Relative measurements of forewing of holotype: length 144, maximum width 46, length of submarginal vein 60, of marginal vein 4, of stigmal vein 7, of postmarginal vein 4; of hindwing: length 93, maximum width 26. Base of forewing as in Fig. 147.

Gaster. Apex of hypopygium reaching to about two-thirds along gaster. Relative measurements of paratype: length of ovipositor 95, of gonostylus 33 [mid tibia 54]. Ovipositor as in Fig. 148.

♂. Length 0.92–1.13 mm.

Similar to female except antennae (Fig. 143) and genitalia (Fig. 144). Relative measurements of head and forewings similar to those given for female except that scape is proportionately about one-eighth shorter.

DISTRIBUTION. Trinidad, Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, Guanapo Valley, 29.vii.1976 (J. S. Noyes) (BMNH).

Paratypes. **Brazil**: 2 ♀ 1 ♂, Santa Catarina, Nova Teutonia, 29.iv.1941; 2 ♀, Nova Teutonia, 9.v.1941; 10 ♀, 10 ♂, Nova Teutonia, iii.1950; 1 ♀, Parana, Rondon, 29.x.1952 (*F. Plaumann*) (BMNH; MLP, La Plata; CIBC, Trinidad; USNM, Washington; UC, Riverside; PPRI, Pretoria; ZI, Leningrad).

COMMENTS. Also a further two undescribed species from Trinidad (BMNH) and Brazil (CNC, Ottawa). Both differ from the type-species in lacking the transverse carina at the top of the antennal scrobes.

Superficially the females of this genus resemble *Tetracnemoidea*, but can be easily separated using the characters given in the key. The males differ in having the antennae simple, without rami.

The genus is best placed in the subfamily Encyrtinae (as defined by Trjapitzin, 1973*b*) but placement to tribe is difficult. It may be related to *Ooencyrtus* and *Echthrodryinus* but differs from these in the mandibles having three acute teeth, the hypopygium reaching or very nearly reaching the apex of the gaster, and the male having very similar antennae to the female as in some genera included in the subtribe Aphygina.

ARRHENOPHAGOIDEA Girault

(Key couplet ♀ 21. Figs 21, 141, 142)

Arrhenophagoidea Girault, 1915*d*: 73. Type-species: *Arrhenophagoidea coloripes* Girault, by monotypy.

INCLUDED SPECIES. Four, none of which are known to occur in the Neotropics, but one undescribed species from Trinidad (BMNH).

REFERENCE. Revision: Annecke & Prinsloo (1974).

DISTRIBUTION. Trinidad. World: South Africa, Australia.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. Fig. 21 is drawn from the collapsed head of the only specimen of this genus taken from Trinidad. The head of dry mounted material of this genus generally collapses in this way, giving it a rather narrow, elongate appearance, but in live specimens or in slide mounted material the head is of more normal encyrtid shape.

The South American species differs from the other known species in having clearly tridentate mandibles, rather flattened hind tibia and enlarged fifth tarsal segment (Fig. 141), and a long distinct stigmal vein (Fig. 142). I had originally considered describing a new genus to accommodate this species, but now feel that it is best to include it in the present genus.

Placed in the tribe Psyllechthriini.

ARRHENOPHAGUS Aurivillius

(Key couplets: ♀ 1; ♂ 30. Fig. 6)

Arrhenophagus Aurivillius, 1888: 144. Type-species: *Arrhenophagus chionaspidis* Aurivillius, by monotypy. *Mymariella* Risbec, 1951: 402. Type-species: *Mymariella parlatoriae* Risbec, by monotypy.

INCLUDED SPECIES. Three, one of which occurs in the Neotropics: *chionaspidis* Aurivillius.

REFERENCE. Annecke & Prinsloo (1974).

DISTRIBUTION. Argentina, Peru, Guyana, Puerto Rico, Jamaica and Barbados. World: Nearctic and Palearctic regions, India, Africa.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. The only genus included in the tribe Arrhenophagini.

ASEIRBA Cameron

(Key couplets: ♀ 152; ♂ 93)

Aseirba Cameron, 1884: 127. Type-species: *Aseirba caudata* Cameron, by monotypy.

INCLUDED SPECIES. One: *caudata* Cameron (= *cultrata* Kerrich) and a further four undescribed species from Brazil (BMNH; CNC, Ottawa).

DISTRIBUTION. Brazil, Guatemala.

BIOLOGY. Unknown.

COMMENTS. One of the two female syntypes of *caudata* Cameron (labelled: 'Torola, 1000ft, champion, B.C.A. Hymen. I *Aseirba caudata*, Cam., "*Aseirba caudata* Cam. type. BCA Hy. 1.128"') in the BMNH is here designated LECTOTYPE.

Kerrich (1954: 371) treated *Aseirba* as a junior synonym of *Cerchysius* and proposed the name *cultratus* as a replacement name for *caudatus* Cameron nec Forster, 1841. Since *Aseirba* is here considered distinct from *Cerchysius* the original species name is reverted to since *cultratus* has not been used since it was originally proposed.

The four undescribed species differ from *caudata* in having the hypopygium not extending to the apex of the gaster whereas in *caudata* it reaches the apex. The mandibles are bidentate and not tridentate as stated by Kerrich. I hesitate to describe a new genus to accommodate the four undescribed species on the differences exhibited by the hypopygium until the taxonomic significance of this character can be fully ascertained. The genus may possibly belong to the tribe Bothriothoracini, and is very probably near *Hemencyrtus*.

ATELAPHYCUS Blanchard

Atelaphycus Blanchard, 1940: 107. Type-species, *Atelaphycus eriococci* Blanchard, by monotypy.

INCLUDED SPECIES. One: *eriococci* Blanchard (1940: 107).

DISTRIBUTION. Argentina.

BIOLOGY. Parasites of Eriococcidae (Homoptera).

COMMENTS. The type of *eriococci* Blanchard is apparently lost (De Santis, 1964: 119). It is impossible to place the genus from the short description, but it may be close to and possibly synonymous with *Metaphycus*. Species of *Metaphycus* with exerted ovipositors are known from South America.

AVETIANELLA Trjapitzin

(Key couplets: ♀ 213; ♂ 58. Fig. 128)

Avetianella Trjapitzin, 1968: 97. Type-species: *Avetianella capnodiobia* Trjapitzin, by monotypy.

INCLUDED SPECIES. Two, neither known from the Neotropics, but two undescribed species from Trinidad (BMNH; CNC, Ottawa) and Brazil (BMNH).

REFERENCE. Trjapitzin (1971d).

DISTRIBUTION. Trinidad, Brazil. World: Holarctic.

BIOLOGY. Parasites of eggs of Cerambycidae and Scolytidae (Coleoptera).

COMMENTS. Placed in the tribe Microterytini, subtribe Oobiina.

AZTECENCYRTUS Timberlake

(Key couplet: ♀ 101)

Aztecencyrtus Timberlake, 1926: 16. Type-species: *Aztecencyrtus flavus* Timberlake, by monotypy.

INCLUDED SPECIES. Two: *flavus* Timberlake (1926: 18) and *iceryae* (Howard, 1882: 379) (**comb. n.** from *Cerchysius* Westwood).

DISTRIBUTION. Mexico, Jamaica.

BIOLOGY. Parasites of Margarodidae (Homoptera).

COMMENTS. Apparently close to *Cirrencyrthus* from which it can be separated using the characters given in the key. Possibly best placed in the tribe Aphycini, subtribe Aphycina, although Trjapitzin (1973b) includes it in the tribe Homalotylini, which may be correct. The only known specimens of the two included species are the holotypes and both lack the clavae which appear to be the only certain means of separating the Aphycina from the Homalotylini.

BAEOENCYRTUS De Santis

(Key couplet: ♂ 52. Fig. 127)

Baeoencyrtus De Santis, 1964: 204. Type-species: *Baeoencyrtus platys* De Santis, by monotypy.

INCLUDED SPECIES. One: *platys* De Santis (1964: 205).

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. The holotype of *platys* is on a slide and is therefore difficult to place systematically. It may be near *Metaphycus* (tribe Aphycini, subtribe Paraphycina).

BENNETTISCA gen. n.

(Key couplet: ♀ 78. Figs 43, 149, 150)

Type-species: *Bennettisca flavigena* sp. n.

♀. *Head*. In side view, moderately deep and most strongly curved at a level with top of antennal scrobes, frontovertex only slightly convex. Eye about one-third longer than broad, naked, very nearly reaching occipital margin which is sharp. Malar space nearly three-quarters as long as eye and with malar sulcus absent. Frontovertex a little more than one-third head width; posterior ocellus separated from eye margin and occipital margin by less than its own diameter, ocelli more or less forming a right angle. Antennal scrobes moderately deep, meeting dorsally and reaching about half way between antennal toruli and anterior ocellus; antennal torulus separated from mouth margin by slightly less than its own length and from other torulus by nearly twice its own length, top of torulus slightly below level of lower eye margin; scape slightly broadened and flattened, shorter than malar space, pedicel conical and longer than half length of funicle which is six-segmented, all funicle segments transverse and cylindrical, distinctly broadening distally, clava three-segmented, much wider and slightly longer than funicle and with a broad oblique apical truncation, longitudinal sensilla on sixth funicle segment and clava. Frontovertex with numerous colourless setae and with fine, closely meshed, coriaceous sculpture which gives it an almost granulate appearance, sculpture becoming more elongate on lower parts of face, almost transversely strigose between eyes and scrobes, more normal on cheeks and interantennal prominence. Mandibles with two short, acute teeth and a short truncation, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view, moderately deep, scutellum flat. Mesoscutum without notaular lines and about two and half times as broad as long, axillae meeting apically, scutellum slightly longer than broad with apex acute and with a very broad translucent flange along sides and at apex, flange about one-eighth as long as scutellum, completely covering the propodeum medially and slightly downcurved apically as in *Blanchardiscus* (Fig. 12), propodeum medially about one-eighth as long as scutellum (without flange). Mesoscutum, axillae, scutellum and mesopleura with fine, closely meshed coriaceous sculpture and covered with numerous short, pale setae (except mesopleura), propodeum with slightly elongate, reticulate sculpture extending to spiracles, metanotum with similar sculpture. Forewing hyaline, slightly more than twice as long as broad, densely hairy, basal cell and costal cell dorsally with setae as dense as in centre of wing; submarginal vein with an apical hyaline break which extends to anterior wing margin and is more or less confluent with the speculum; marginal vein very transverse, almost absent and not reaching anterior margin of wing, postmarginal vein absent, stigmal vein about one-quarter as long as the submarginal; marginal cilia absent at wing apex and along anterior margin of wing. Hind wing about three times as long as broad. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. About as long as thorax and sides with strigose sculpture and very hairy. Cerci about one-third along gaster, paratergites absent, hypopygium more or less reaching apex of gaster and produced as in *Mucencyrtus* (Fig. 84) but with projection relatively shorter. Ovipositor about two-thirds as long as mid tibia and hidden, gonostylus about one-fifth as long as mid tibial spur.

♂. Unknown.

Named in honour of Dr F. D. Bennett.

Bennettisca flavigena sp. n.

(Figs 43, 149, 150)

♀. Length 0.85–0.90 mm (holotype 0.85 mm).

Colour. Body generally yellowish orange, slightly paler ventrally. Upper and lower margins of scape, metanotum, anterior margin of propodeum and dorsum of gaster brown; cheeks, temples and clypeal margin very slightly infusate; mid and hind tibia with some faintly darker areas.

Head. Relative measurements of head of holotype: maximum head width 66, frontovertex width at median ocellus 23, malar space 25, eye length 37, eye width 30, POL 15, OOL 2.5, scape length 18, other proportions of antenna as in Fig. 43.

Thorax. Relative measurements of forewing of holotype: length 122, maximum width 53, length of submarginal vein 58, marginal vein 2, stigmal vein 13; of hindwing: length 87, maximum width 28. Base of forewing as in Fig. 150.

Gaster. Relative measurements of paratype: ovipositor length 38, gonostylus length 3 [mid tibia 48, mid tibial spur 16]. Ovipositor as in Fig. 149.

♂. Unknown.

DISTRIBUTION. Trinidad.

BIOLOGY. Unknown, but probably parasites of Acleridae (Homoptera).

MATERIAL EXAMINED

Holotype ♀, **Trinidad**; Curepe, Santa Margarita Circular Road, 9–23.vi.1974, Moericke trap (*F. D. Bennett*) (CNC, Ottawa).

Paratype. 1 ♀, same data as holotype (BMNH).

COMMENTS. I have examined a further female from Trinidad (CNC, Ottawa) which was provisionally placed in this genus, but it has a much longer marginal vein (about four times as long as broad), more dense setae on the thorax and gaster, and the setae on the submarginal vein, marginal vein and along the distal margin of the basal cell are very much thicker. I feel it best to exclude this species from *Bennettisca* for the present, but future work may show that it can be satisfactorily accommodated here.

Bennettisca belongs to the same group of genera as *Allencyrtus* Annecke & Mynhardt and *Mucencyrtus* (subtribe Microteryina) which both include parasites of Acleridae. It differs in

the form of the antennae, sharp occipital margin, broad translucent flange on scutellum and forewing venation. Both *Allencyrtus* and *Mucencyrtus* have funicle segments all longer than broad, rounded occipital margin, very short or non-existent flange on scutellum and longer marginal vein. Also included in this group of genera is *Paramucrona* which has setae in basal and costal cell of forewing rather sparse and all the funicle segments longer than broad.

BLANCHARDISCUS De Santis

(Key couplets: ♀ 20; ♂ 16. Figs 12, 13, 115)

Blanchardiscus De Santis, 1964: 268. Type-species: *Blanchardiscus scutellaris* De Santis, by monotypy.

INCLUDED SPECIES. One: *scutellaris* De Santis, 1964: 268.

DISTRIBUTION. Argentina, Brazil.

BIOLOGY. Unknown.

COMMENTS. Placed in the tribe Blanchardiscini.

BLEPYRUS Howard

(Key couplets: ♀ 143, 236, 250; ♂ 9)

Blepyrus Howard, 1898b: 234. Type-species: *Blepyrus mexicanus* Howard, by designation of Ashmead, (1900: 373).

Coccophoctonus Ashmead, 1900: 375. Type-species: *Coccophoctonus dactylopii* Ashmead, by monotypy.

INCLUDED SPECIES. Two: *clavicornis* (Compere) and *insularis* (Cameron); also a further two or three undescribed species from Trinidad (BMNH).

REFERENCE. Revision: Kerrich (1967: 225–228).

DISTRIBUTION. Brazil, Guyana, Colombia, Trinidad, Mexico. World: Nearctic region, Pacific Islands, South East Asia, India, Africa.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Neodiscini.

BOTHRIOCRAERA Timberlake

(Key couplets: ♀ 18; ♂ 21)

Bothriocraera Timberlake, 1916: 567. Type-species: *Bothriocraera flavipes* Timberlake, by monotypy.

INCLUDED SPECIES. Two, one from the Neotropics: *bicolor* Compere & Zinna, 1955: 101.

DISTRIBUTION. Trinidad. World: Nearctic.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Aphycini, subtribe Aphycina.

BOTHRIOTHORAX Ratzeburg

(Key couplets: ♀ 129, 184; ♂ 111. Fig. 87)

Bothriothorax Ratzeburg, 1844: 209. Type-species: *Bothriothorax altensteinii* Ratzeburg, by monotypy.

Trimorphocerus Dahlbom, 1857: 292. Type-species: *Bothriothorax altensteinii* Ratzeburg, by designation of Gahan & Fagan (1923: 149).

INCLUDED SPECIES. Twenty-seven, none of which occurs in the Neotropics, but one undetermined species from Trinidad (BMNH).

REFERENCE. Peck (1963: 375).

DISTRIBUTION. Trinidad. World: Holarctic.

BIOLOGY. Parasites of larvae of Syrphidae (Diptera).

COMMENTS. Placed in the tribe Bothriothoracini, subtribe Bothriothoracina.

BRACHYPLATYCERUS De Santis

(Key couplets: ♀ 5; ♂ 92. Fig. 9)

Brachyplatycerus De Santis, 1972b: 49. Type-species: *Brachyplatycerus minutus* De Santis, by monotypy.

INCLUDED SPECIES. One: *minutus* De Santis, 1972b: 50; also two further undescribed species from Trinidad and one from Brazil (BMNH).

DISTRIBUTION. Argentina, Brazil, Trinidad.

BIOLOGY. Unknown.

COMMENTS. Appears to be very close to *Hemaenasius*, differing only in the number of funicle segments. *Hemaenasius* has been placed in the tribe Discodini, subtribe Hemaenasiina by Trjapitzin & Gordh (1978b).

BRETHESIELLA Porter

(Key couplets: ♀ 140; ♂ 49. Fig. 63)

Brethesia Timberlake, 1919a: 190. Type-species: *Brethesia latifrons* Timberlake, by original designation. [Homonym of *Brethesia* Schrottky, 1909.]

Brethesiella Porter, 1920: 16. [Replacement name for *Brethesia* Timberlake.]

Brethesiella Timberlake, 1920a: 96. [Replacement name for *Brethesia* Timberlake.]

Perissodromus Blanchard, 1940: 107. Type-species: *Perissodromus longipes* Blanchard, by monotypy.

Neocopidosoma Blanchard, 1940: 126. Type-species: *Neocopidosoma coccidophaga* Blanchard, by monotypy. [Homonym of *Neocopidosoma* Ishii, 1923.] **Syn. n.**

Noblanchardia Ghesquière, 1946: 369. [Replacement name for *Neocopidosoma* Blanchard.] **Syn. n.**

INCLUDED SPECIES. Four: *abnormicornis* (Girault, 1917a: 118), *coccidophaga* (Blanchard; De Santis, 1964: 176) (**comb. n.**), *latifrons* (Timberlake; De Santis, 1964: 171) and *longipes* (Blanchard; De Santis, 1964: 172).

DISTRIBUTION. Argentina, Brazil, Trinidad.

BIOLOGY. Parasites of Margarodidae (Homoptera).

COMMENTS. I have examined the holotype of *Neocopidosoma coccidophaga*. It is a male and belongs to *Brethesiella*. All four species are extremely close and may just be forms of a single species.

Both Timberlake (1919a: 193) and Tachikawa (1978: 49) state that they believe the host of *Brethesiella* is actually chrysopid or hemerobiid larvae (Neuroptera) predatory on *Icerya* Signoret (Homoptera: Coccoidea, Margarodidae). However, both Dr F. D. Bennett and I (CIBC, Trinidad) have reared specimens of this genus in very large numbers from *Icerya montserratensis* Riley & Howard.

Placed in the tribe Homalotylini, subtribe Brethesiella.

CALLIENCYRTUS De Santis

(Key couplet: ♀ 104)

Calliencyrtus De Santis, 1960: 61. Type-species: *Calliencyrtus bucculentus* De Santis, by monotypy.

INCLUDED SPECIES. One: *bucculentus* De Santis, 1960: 63.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

COMMENTS. I am unable to place the genus according to Trjapitzin (1973*b*) classification of the Encyrtidae.

CARABUNIA Waterston

(Key couplets: ♀ 125; ♂ 60. Fig. 64)

Carabunia Waterston, 1928: 249. Type-species: *Carabunia myersi* Waterston, by monotypy.

INCLUDED SPECIES. Five, two from the Neotropics: *myersi* Waterston and *waterstoni* Subba Rao, and one undetermined species from Colombia (AMNH, New York).

REFERENCE. Revision of world species: Subba Rao (1973).

DISTRIBUTION. Colombia, Cuba, Puerto Rico, Jamaica. World: Africa and Asia.

BIOLOGY. Parasites of Cercopidae (Homoptera).

COMMENTS. Placed in the tribe Neocladini.

CERCHYSIUS Westwood

(Key couplets: ♀ 153, 154)

Cerchysius Westwood, 1832: 128. Type-species: *Encyrtus urocerus* Dalman, by designation of Westwood (1840: 73).

INCLUDED SPECIES. Nineteen, none of which occurs in the Neotropics, but two undetermined species from Ecuador (CNC, Ottawa) and Peru (BMNH) and perhaps also *Prionomitus fuscipalpis* Kieffer in Kieffer & Jörgensen, 1910: 413.

REFERENCE. Partial world revision: Kerrich (1954).

DISTRIBUTION. Ecuador, Peru. World: cosmopolitan.

BIOLOGY. Parasites of Chamaemyiidae (Diptera).

COMMENTS. Placed in the tribe Microteriyini, subtribe Pseudencyrtina.

CHALCASPIS Howard

(Key couplets: ♀ 141; ♂ 7)

Chalcaspis Howard, 1895: 606. Type-species: *Chalcaspis pergandei* Howard, by monotypy.

INCLUDED SPECIES. Four, one from the Neotropics: *lucida* Kerrich.

REFERENCE. Revision: Kerrich (1967: 191–195).

DISTRIBUTION. Cuba. World: Nearctic.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Rhinoencyrtini, subtribe Aenasiina.

CHEILONEURUS Westwood

(Key couplets: ♀ 34, 58, 95; ♂ 86, 115, 131, 136, 144, 146. Fig. 36)

Cheiloneurus Westwood, 1833: 343. Type-species: *Encyrtus elegans* Dalman, by monotypy.

Chrysopophagus Ashmead, 1894: 246. Type-species: *Chrysopophagus compressicornis* Ashmead, by monotypy.

Blatticida Ashmead, 1904: 305. Type-species: *Blatticida pulchra* Ashmead, by monotypy.
Cristatothorax Girault, 1911: 169. Type-species: *Cristatothorax pulcher* Girault, by monotypy.
Metacheiloneurus Hoffer, 1957: 336. Type-species: *Metacheiloneurus moestus* Hoffer, by monotypy. **Syn. n.**

INCLUDED SPECIES. Ninety-four, 11 from the Neotropics: *albinotatus* De Santis, *angulatus* De Santis, *cristatus* De Santis, *cupreicollis* Ashmead, *elegans* (Dalman), *gahani* (Dozier, 1927: 270) (**comb. n.** from *Achrysopophagus*), *inimicus* Compere, 1925: 297, *loretanus* De Santis, 1972: 60, *nigrescens* Howard (= *longisetaceus* De Santis), *praenitens* Waterston, 1922: 49 and *pulvinariae* Dozier, 1927: 363; also a further ten or more undetermined species (BMNH; USNM, Washington).

REFERENCE. Revision of Argentinian species: De Santis (1964: 332–353).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Hyperparasites of other Chalcidoidea, mainly Encyrtidae and Aphelinidae (Hymenoptera).

COMMENTS. Placed in the tribe Cheiloneurini.

CHRYSOPLATYCERUS Ashmead

(Key couplets: ♀ 46; ♂ 36. Fig. 26)

Riley Howard, 1888: 80. Type-species: *Riley* *splendens* Howard, by monotypy. [Homonym of *Riley* Ashmead, 1888.]

Chrysoplatycerus Ashmead, 1889: 38. [Replacement name for *Riley* Howard.]

Encyrtolophus De Santis, 1972b: 49. Type-species: *Encyrtolophus flavicollis* De Santis, by monotypy.

Paraplatycerus Hall, 1974: 19. Type-species: *Paraplatycerus citriculus* Hall, by monotypy.

Metaplatycerus Gordh & Trjapitzin in Trjapitzin & Gordh, 1978a: 384. Type-species: *Chrysoplatycerus ferrisi* Timberlake, by monotypy. **Syn. n.**

INCLUDED SPECIES. Four, three of which occur in the Neotropics: *colombiensis* Kerrich, *flavicollis* (De Santis) and *splendens* (Howard).

REFERENCE. Revision: Kerrich (1978: 136–142).

DISTRIBUTION. Throughout the Neotropics. World: Nearctic region, South Africa.

BIOLOGY. Parasites of Pseudocidae (Homoptera).

COMMENTS. I disagree with Trjapitzin & Gordh's (1978a) view that *ferrisi* requires generic status. *C. flavicollis* exhibits characters intermediate between *splendens* and *ferrisi*, notably in the structure of the mesoscutum and scutellum, although it is nearest to *ferrisi*. If *Metaplatycerus* and *Chrysoplatycerus* were to be maintained as separate genera then *Metaplatycerus* should be considered a junior synonym of *Encyrtolophus*.

Placed in the tribe Chrysoplatycerini, subtribe Chrysoplatycerina.

CIBDELOENCYRTUS De Santis

(Key couplet: ♀ 231)

Cibdeloencyrtus De Santis, 1964: 209. Type-species: *Cibdeloencyrtus aphelinoides* De Santis, by monotypy.

INCLUDED SPECIES. One: *aphelinoides* De Santis, 1964: 210.

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. Difficult to place according to Trjapitzin's (1973b) classification, but it is possibly related to *Echthroplexiella* (tribe Miraini, subtribe Echthroplexiellina).

CICOENCYRTUS gen. n.

(Key couplets: ♀ 240; ♂ 54. Figs 108, 151–155)

Type-species: *Cicoencyrtus angustifrons* sp. n.

♀. *Head*. In side view moderately deep and slightly angled at a level with dorsal margin of antennal scrobes, frontovertex slightly convex. Eye about one-half longer than broad, clothed with short, pale setae and overreaching occipital margin which is rounded. Malar space less than half as long as eye and with malar sulcus absent. Frontovertex narrow, less than one-fifth head width; posterior ocellus separated from occipital margin by slightly more than its own diameter and almost touching eye margin, ocelli forming a strongly acute angle of about 25–45°. Antennal scrobes moderately impressed, long and narrow, meeting dorsally, reaching slightly more than half way between antennal toruli and anterior ocellus and sharply separated from frontovertex; antennal torulus separated from mouth margin by much less than half its own length and from other torulus by slightly less than twice its own length, top of torulus slightly below level of lower eye margin; scape subcylindrical and stout, pedicel conical and about as long as the first four funicle segments together, funicle six-segmented, segments transverse, cylindrical and broadening distally, distal segments occasionally quadrate or slightly longer than broad, clava three-segmented and rounded apically, more than half as long as funicle, longitudinal sensilla on apical two or three funicle segments and clava. Frontovertex with shallow coriaceous sculpture except between and behind ocelli where it is more coarse and sometimes granulate in appearance, more elongate on lower parts of face, sparse brown setae on frontovertex and cheeks, interantennal prominence with at least a few conspicuous white setae. Mandibles with three acute teeth, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep and dorsally more or less flat. Mesoscutum without notaular lines, slightly broader than long, axillae touching, scutellum about as long as broad and with apex more or less rounded, propodeum very short, medially less than one-tenth as long as scutellum. Pronotum, mesoscutum and axillae slightly shiny and with coriaceous sculpture, scutellum matt and with punctiform sculpture giving it an almost granulate appearance, mesopleura anteriorly with shallow strigose sculpture becoming more regular and reticulate posteriorly, propodeum centrally smooth, but with some irregular, shallow sculpture laterally. Forewing hyaline, nearly two and half times as long as broad, basal cell sparsely hairy and naked proximally, speculum not interrupted but more or less closed; submarginal vein with an apical hyaline break, marginal vein about as long as broad to nearly twice as long as broad, stigmal at least about twice as long as marginal, postmarginal about as long as marginal or slightly shorter. Hind wing about three and a half times as long as broad. Mid tibial spur much shorter than mid basal tarsal segment.

Gaster. Slightly shorter than thorax. Cerci slightly more than one-third along gaster, paratergites absent, apex of hypopygium from about one half to three-quarters along gaster and incised apically, exerted part of ovipositor equal to about two-thirds length of gaster or mid tibia. Ovipositor about one and half times as long as gaster or slightly more than twice as long as mid tibia, gonostylus slightly longer than mid tibia.

♂. Similar to female except for genitalia and clava which is entire.

Cicoencyrtus angustifrons sp. n.

(Figs 108, 151–155)

♀. Length (excluding ovipositor): 1.33–1.49 mm (holotype 1.33 mm).

Colour. Frontovertex reddish brown, black between ocelli and on occipital margin between eyes; lower parts of face and antennal scrobes black, slightly tinged green, particularly on genae; eyes reddish; scape and basal half of pedicel brown, apical half of pedicel and flagellum yellowish orange, slightly darker proximally; thorax black, tinged green with some slightly paler areas which are dark brownish orange; legs brown, except apical half of all tibiae and arsi which are yellowish testaceous; metanotum and centre of propodeum brownish orange; gaster dark brown with cercal plates ringed orange-brown, ovipositor sheaths dark brown.

Head. In frontal aspect as in Fig. 108. Ocelli forming an angle of about 25–30°. Relative measurements of head of holotype: maximum head width about 67, minimum width of frontovertex 8, malar space 25, eye length about 55, eye width about 36, POL 5, OOL 1, scape length 38, other proportions of antenna as in Fig. 154.

Thorax. Relative measurements of forewing of holotype: length 172, maximum width 78, length of submarginal vein 72, marginal vein 5.5, stigmal vein 14, postmarginal vein 5.5; of hindwing: length 112, maximum width 30.

Gaster. Apex of hypopygium about half way along gaster. Relative measurements of gaster of paratype: length of exerted part of ovipositor 52, length of ovipositor 147, length of gonostylus 74 [mid tibia 66]. Ovipositor as in Fig. 155.

♂. Length 1.23–1.29 mm.

As for female. Antenna as in Fig. 151, base of forewing 154, genitalia 152. Aedeagus just over half as long as mid tibia, digiti each with two spines at apex.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 2.xi.1944 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 1 ♀, 2 ♂, Santa Catarina, Nova Teutonia, 20.ix.1944, 14.x.1944, 13.x.1944 respectively (*F. Plaumann*) (BMNH).

COMMENTS. Also one further undescribed species from Brazil (BMNH) and Trinidad (CNC, Ottawa), the female of which differs from the type-species in having a wider frontovertex and a more or less anelliform fourth funicle segment.

The genus appears to be related to *Archinus* but can be easily separated by having six funicle segments (*Archinus* has five). Possibly best placed in the tribe Aphycini, subtribe Paraphycina.

CIRRHENCYRTUS Timberlake

(Key couplets: ♀ 101, 211; ♂ 44, 53)

Cirrhencyrtus Timberlake, 1918: 360. Type-species: *Cirrhencyrtus ehrhorni* Timberlake, by monotypy.

Neoanisotylus De Santis, 1939: 330. Type-species: *Neoanisotylus bimaculatus* De Santis, by monotypy.

INCLUDED SPECIES. Four, two of which are found in the Neotropics: *bimaculatus* (De Santis, 1939: 331) and *diversicolor* (Compere, 1939: 62) (**comb. n.** from *Waterstonia*).

DISTRIBUTION. Brazil, Argentina, Trinidad. World: Holarctic region.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. I have not seen any types of *Waterstonia diversicolor*, but it is clear from the description that it belongs to *Cirrhencyrtus* and is very close to *bimaculatus*.

Trjapitzin & Gordh (1978b) place the genus in the tribe Homalotylini, subtribe Homalotyliina. In my view this genus would be better placed in the tribe Aphycini, subtribe Aphycina. I have examined specimens determined by Timberlake as *Cirrhencyrtus ehrhorni* and also the holotype of *Neoanisotylus bimaculatus* and both show remarkable similarities to the species of *Aphycus* Mayr, particularly the latter. They differ principally in having the well-marked notaular lines (absent in *Aphycus*) and relatively longer ovipositor. Perhaps this genus shows a closer relationship between the two subtribes than Trjapitzin's (1973b) classification would infer.

COCCIDAPHYCUS Blanchard

(Key couplets: ♀ 26; ♂ 13)

Coccidaphycus Blanchard, 1940: 110. Type-species: *Coccidaphycus nigricans* Blanchard, by monotypy.

INCLUDED SPECIES. One: *nigricans* Blanchard (De Santis, 1964: 244); also one undescribed species from Trinidad (BMNH).

DISTRIBUTION. Argentina, Trinidad.

BIOLOGY. Parasites of Coccidae (Homoptera).

COMMENTS. The genus appears to be very close to *Trechnites* Thomson (tribe Trechnitini, subtribe Trechnitina) but differs in the longer marginal vein, very slight triangular expansion at apex of submarginal vein and host (*Trechnites* spp. are psyllid parasites).

COCCIDENCYRTUS Ashmead

(Key couplets: ♀ 68, 88, 89, 167, 222, 244; ♂ 130, 140, 143. Figs 39, 47)

Coccidencyrtus Ashmead, 1900: 383. Type-species: *Encyrtus ensifer* Howard, by monotypy.

Coccidencyrtoides Blanchard, 1940: 107. Type-species: *Coccidencyrtoides annulipes* Blanchard, by designation of De Santis (1967b: 161).

INCLUDED SPECIES. Twenty-four, seven from the Neotropics: *annulipes* (Blanchard), *blanchardi* (De Santis), *denieri* Blanchard, *grioti* Blanchard, *maculicornis* (Blanchard), *malloi* Blanchard and *obesus* De Santis; also a further four or five undetermined species from Brazil and Trinidad (BMNH; CNC, Ottawa).

REFERENCE. Revision of Argentinian species: De Santis (1964: 218–231).

DISTRIBUTION. Argentina, Brazil, Trinidad. World: cosmopolitan.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. The types of *denieri* and *grioti* are apparently lost and the names should be considered nomina dubia, but in any case *denieri* cannot belong in *Coccidencyrtus* because the frontovertex is too narrow. I have not seen the types of either *maculicornis* or *malloi* but, from De Santis' (1964) redescrptions of these species, they may be correctly placed. The only described species from South America which are with certainty correctly placed are *blanchardi* and *annulipes*; *obesus* does not belong in *Coccidencyrtus* but at present I cannot place it generically.

Placed in the tribe Habrolepidini (Trjapitzin & Gordh, 1978b).

COCCIDOCTONUS Crawford

(Key couplets: ♀ 186, 223; ♂ 105. Fig. 89)

Coccidoctonus Crawford, 1912: 167. Type-species: *Coccidoctonus trinidadensis* Crawford, by monotypy.

Quaylea Timberlake, 1919b: 214. Type-species: *Cerchysius whittieri* Girault, by original designation. **Syn. n.**

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *trinidadensis* Crawford, 1912: 168.

DISTRIBUTION. Trinidad, Barbados, Grenada, St Vincent. World: Nearctic region, South East Asia, Australia.

BIOLOGY. Hyperparasite of other Encyrtidae and of Pteromalidae (Hymenoptera) parasitizing Coccidae and Pseudococcidae (Homoptera).

I have examined specimens determined by Timberlake as *Quaylea whittieri* and these belong to *Coccidoctonus* (**comb. n.**), although they are a distinct species from *trinidadensis*.

I am unable to place the genus according to Trjapitzin's (1973b) classification of the Encyrtidae.

COELASPIDIA Timberlake

(Key couplets: ♀ 30; ♂ 39)

Coelaspidia Timberlake, 1923: 326. Type-species: *Coelaspidia osborni* Timberlake, by monotypy.

INCLUDED SPECIES. One: *osborni* Timberlake, 1923: 330.

DISTRIBUTION. Mexico.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Acroaspidiini.

COELOPENECYRTUS Timberlake

(Key couplets: ♀ 89, 252; ♂ 40. Figs 100, 120)

Coelopencyrtus Timberlake, 1919b: 218. Type-species: *Coelopencyrtus odyneri* Timberlake, by original designation.

Nesencyrtus Timberlake, 1919b: 223. Type-species: *Adelencyrtus kaalae* Ashmead, by monotypy.

Batrachencyrtus Jansson, 1957: 71. Type-species: *Batrachencyrtus callidii* Jansson, by monotypy.

INCLUDED SPECIES. Nineteen, one of which is found in the Neotropics: *gargaris* (Walker) (= *Giraultella lopesi* Costa Lima & Ferreira, 1963: 431).

REFERENCE. World revision: Burks (1958: 22–26); revision African species: Annecke (1968: 250–258).

DISTRIBUTION. Brazil, Trinidad, St Vincent. World: cosmopolitan.

BIOLOGY. Polyembryonic parasites of larvae of Xylocopidae (Hymenoptera) (and also Hylaeidae in other parts of the world).

COMMENTS. Placed in the tribe Copidosomatini, subtribe Coelopencyrtina.

COMPERIA Gomes

(Key couplets: ♀ 65; ♂ 27)

Comperia Gomes, 1942: 41. Type-species: *Dicarnosis merceti* Compere, by monotypy.

INCLUDED SPECIES. Seven, one of which is found in the Neotropics: *merceti* (Compere, 1938: 317).

REFERENCE. Key to world species: Prinsloo & Annecke (1978: 315–316).

DISTRIBUTION. Throughout the Neotropics. World: Nearctic region, African continent, Australia.

BIOLOGY. Parasites of cockroach oothecae (Orthoptera: Blattodea).

COMMENTS. Placed in the tribe Comperiini.

COMPERIELLA Howard

(Key couplets: ♀ 47; ♂ 137)

Comperiella Howard, 1906: 121. Type-species: *Comperiella bifasciata* Howard, by monotypy.

Pseudanusia Girault, 1915d: 155. Type-species: *Pseudanusia pia* Girault, by monotypy.

Habrolepistia Mercet, 1921: 668. Type-species: *Habrolepistia cerapterocera* Mercet, by monotypy.

INCLUDED SPECIES. Nine, one of which is from the Neotropics: *bifasciata* Howard (= *Habrolepistia cerapterocera* Mercet, 1921: 669).

DISTRIBUTION. Argentina, Chile, Mexico, Bermuda. World: cosmopolitan.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. Placed in the tribe Habrolepidini, subtribe Comperiellina.

COPIDOSOMA Ratzeburg

(Key couplets: ♀ 155, 173, 201, 253; ♂ 77. Figs 69, 97, 105, 107, 109)

Copidosoma Ratzeburg, 1844: 157. Type-species: *Copidosoma boucheanum* Ratzeburg, by monotypy.

Verdunia Mercet, 1917b: 203. Type-species: *Verdunia gloriosa* Mercet, by monotypy.

Neocopidosoma Ishii, 1923: 101. Type-species: *Neocopidosoma komabae* Ishii, by monotypy.

Arrenoclavus Doutt, 1948: 145. Type-species: *Copidosoma koehleri* Blanchard, by monotypy.

INCLUDED SPECIES. Eighty-one, five of which are from the Neotropics: *desantisi* Annecke & Mynhardt, 1974: 32, *hyalinistigma* De Santis, 1964: 281, *koehleri* Blanchard (Annecke & Mynhardt, 1974: 32), *silvestrii* (Costa Lima, 1956: 31) (comb. n. from *Paralitomastix*) and *virescens* De Santis, 1972b: 57, also a further six undetermined species from Brazil and West Indies (BMNH; CNC, Ottawa).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Polyembryonic parasites of larvae of Lepidoptera.

COMMENTS. Placed in the tribe Copidosomatini, subtribe Copidosomatina. All the genera in this subtribe are extremely close. *Litomastix* and *Pentalitomastix* both usually have a strongly, obliquely truncate clava (sometimes more rounded on ventral surface than obliquely truncate) whereas all the other genera have the apex of the clava transversely, or very slightly obliquely, truncate or rounded. The latter can be separated using the characters given in the key.

CYDERIUS gen. n.

(Key couplets: ♀ 187. Fis 92, 159)

Type-species: *Cyderius urbicola* sp. n.

♀. *Head*. In profile, moderately deep and most rounded at level with top of antennal scrobes, frontovertex slightly convex. Eye slightly longer than broad, with sparse, short pale hairs and very nearly reaching occipital margin which is acute. Malar space about half length of eye with malar sulcus weakly indicated. Frontovertex about one-third head width; posterior ocellus separated from eye and occipital margin by about half its diameter, ocelli forming an acute angle of about 75°. Antennal scrobes moderately deep, meeting dorsally and reaching slightly further than half way between antennal toruli and anterior ocellus; antennal torulus separated from mouth margin by slightly less than its own length and from other torulus by nearly one and a half times its own length, dorsal margin of torulus slightly below ventral level of eyes; scape subcylindrical and stout, pedicel conical and about as long as first funicle segment, funicle six-segmented, all segments distinctly longer than broad, except the second which is anelliform, clava three-segmented, about half as long as funicle and with apex more or less rounded; longitudinal sensilla very conspicuous and present on all flagellar segments except second. Mouth opening narrow, slightly narrower than minimum width of frontovertex. Frontovertex with shallow, reticulate sculpture, more elongate and coriaceous on lower parts of face. Mandibles with three acute teeth.

Thorax. In side view moderately deep, with mesoscutum and scutellum more or less flat. Mesoscutum without notaular lines, nearly twice as broad as long, axillae meeting, scutellum about as broad as long with apex pointed and produced as a short thin flange, propodeum medially about one-eighth as long as scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, scutellum with deeper, reticulate sculpture which becomes shallower, more irregular and elongate towards sides and apex, mesopleura almost smooth with very shallow, elongate, reticulate sculpture. Forewing hyaline, about two and a half times as long as broad; basal cell sparsely pilose throughout except for a small, naked, triangular area proximally, speculum not interrupted but more or less closed; submarginal vein with an apical hyaline break, marginal vein slightly longer than broad, about twice as long as postmarginal and about half as long as stigmal. Hindwing about four and a half times as long as broad. Mid tibial spur nearly as long as corresponding basal tarsal segment.

Gaster. About as long as thorax, with exerted part of ovipositor about one-fifth length of gaster or one-quarter mid tibia, cerci about three-eighths along gaster, apex of hypopygium not reaching half way along gaster.

♂. Unknown.

Cyderius urbicola sp. n.

(Figs 92, 159)

♀. Length (excluding ovipositor): 0.73 mm.

Colour. Head and thorax dark brown and shiny; scape testaceous, pedicel and flagellum brown; some

orange areas along top of antennal scrobes just above interantennal prominence to outer margins of toruli and from there to lower margin of eye (these may represent lines of weakness in head capsule); legs completely yellow; gaster dark brown, basally and medially orange-brown, ventrally orange; ovipositor sheaths orange-brown.

Head. Relative measurements of head: maximum width 58, frontovertex width at median ocellus 22.5, malar space about 20, eye length 35, eye width 29, POL 9, OOL 2.5, scape length 28, other proportions of antenna as in Fig. 92.

Thorax. Relative measurements of forewing (Fig. 159): length 164, maximum width 63, length of submarginal vein 66, marginal vein 6, stigmal vein 13, postmarginal 3; of hindwing: length 108, maximum width 23.

♂. Unknown.

DISTRIBUTION. Trinidad.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, St Augustine, 15.vii.–13.viii.1976, Malaise trap (*J. S. Noyes*) (BMNH).

COMMENTS. I am unable to place this genus according to Trjapitzin's (1973*b*) classification of the Encyrtinae, although the wings and the structure of the thorax suggest that it may be related to *Archinus* and *Cicoencyrtus* which probably belong in the tribe Aphycini, subtribe Paraphycina. It can easily be separated on the unusual form of the antenna i.e. all segments longer than broad, except the second which is anelliform, and also the presence of an apical flange on the scutellum.

DELOENCYRTUS De Santis

(Key couplets: ♀ 104, 150)

Deloencyrtus De Santis, 1967*a*: 68. Type-species: *Hemencyrtus kuscheli* De Santis, by monotypy.

INCLUDED SPECIES. One: *kuscheli* (De Santis, 1955: 193).

DISTRIBUTION. Juan Fernández Island, Chile.

BIOLOGY. Unknown.

COMMENTS. Very probably belongs to the tribe Microteryni, and possibly subtribe Pseudencyrtina.

DESANTISELLA Subba Rao

(Key couplets: ♀ 124; ♂ 31. Fig. 61)

Desantisella Subba Rao, 1971: 215. Type-species: *Desantisella brasiliensis* Subba Rao, by original designation.

INCLUDED SPECIES. Three: *brasiliensis* Subba Rao, 1971: 216, *plaumanni* Subba Rao, 1971: 218 and *trifasciata* De Santis, 1972*a*: 22.

DISTRIBUTION. Brazil.

BIOLOGY. Hyperparasites of Chamaemyiidae (Diptera) on Acleridae (Homoptera).

COMMENTS. Extremely close to *Meromyzobia* (tribe Miraini, subtribe Mayridina) and differs only in the form of the mid tibial spur (*Meromyzobia* has the mid tibial spur of normal encyrtid form). I think it very likely that the two genera will eventually be considered synonymous, but I hesitate to formally synonymize them here because material of *Ericydnus maculipennis* (type-species of the genus) has not been seen although I have examined some material from Florida which very probably belongs to this genus.

***DESوبيUS* gen. n.**

(Key couplets: ♀ 86, 229; ♂ 26. Figs 119, 160–163)

Type-species: *Desوبيus convexus* sp. n.

♀. *Head*. In profile, moderately deep and more or less evenly curved. Eye about a half longer than broad with conspicuous long setae, and reaching occipital margin which is sharp. Malar space about half eye length and with malar sulcus present. Frontoververtex about one-quarter to one-half head width and with numerous long dark setae; posterior ocellus separated from occipital margin by less than to slightly more than its own diameter and from eye margin by much less than its own diameter, ocelli forming an acute angle of about 60°. Antennal scrobes moderately impressed, meeting dorsally and reaching about half way from antennal toruli to anterior ocellus; antennal torulus separated from mouth margin by about its own length and from other torulus by nearly twice its own length and with dorsal margin below lowest margin of eye; scape subcylindrical or very slightly broadened and flattened with several strong, dark bristles along ventral margin, pedicel conical and slightly less than half as long as funicle, funicle six-segmented, all segments transverse (mostly anelliform) except perhaps the last which may be subquadrate, clava very large, longer and broader than funicle, three-segmented, apically rounded or with a short oblique truncation; longitudinal sensilla on sixth funicle segment and clava only. Frontoververtex usually appearing fairly smooth and shiny, but with shallow coriaceous sculpture which becomes more elongate and of larger mesh on cheeks and lower parts of face, occasionally sculpture deeper and therefore frontoververtex less shiny. Mandibles with three acute teeth, the middle the longest, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. Deep in side view and dorsally convex. Mesoscutum convex and without notaular lines, about a half broader than long, axillae not meeting centrally, scutellum very convex, longer than broad, propodeum medially from about one-sixth to one-tenth as long as scutellum. Scutellum with very inconspicuous tubercles or pits like those found in *Forcipestricis*. Mesoscutum and scutellum with deep, longitudinally semi-striate or strigose sculpture, matt, axillae with deep reticulate-coriaceous sculpture, mesopleura with irregular shallow sculpture, propodeum smooth medially. Forewing hyaline with some slight infumation basally and beneath marginal vein, about two and a half times as long as broad; basal cell with sparse setae throughout except a large naked area proximally, speculum not interrupted and open; submarginal vein with an apical hyaline break, marginal vein about three or four times as long as broad, slightly shorter than stigmal and about as long as postmarginal. Hindwing about four and a half times as long as broad. Mid tibial spur slightly shorter than corresponding basal tarsal segment.

Gaster. Slightly shorter than thorax. Cerci in basal third, paratergites absent, apex of hypopygium nearly reaching apex of gaster. Ovipositor hidden or very slightly protruding, ovipositor short, only slightly longer than half of gaster or about three-fifths to three-quarters length of mid tibia, gonostylus about as long as mid tibial spur.

♂. Essentially similar to female except the frontoververtex is less smooth and therefore less shiny, antennae (Fig. 119) and genitalia (Fig. 161), digiti each with an apical spine and aedeagus slightly less than two-fifths as long as mid tibia. Antennae with flagellum, in some cases having seven-segmented funicle with a one- or two-segmented clava, or in others the funicle is six-segmented with a two- or three-segmented clava. In dry specimens the clava always appears two- or three-segmented, but in cleared slide mounted material the division of the apical segment into two is incomplete or only indicated by a slight thinning of cuticle and distribution of sensillae. Longitudinal sensilla very conspicuous (even on dry mounted material) and present on all flagellar segments.

***Desوبيus convexus* sp. n.**

(Figs 160, 162, 163)

♀. Length: 0.78–0.86 mm (holotype 0.78 mm).

Colour. Head, dorsum of thorax, propodeum and gaster black, frontoververtex and cheeks shiny with faint blue or purple sheen, dorsum of thorax matt, gaster dorsally with some brassy, blue and purple reflections; antenna with scape testaceous, pedicel and clava brown, funicle brownish testaceous; mesopleura and legs pale orange, fore and hind legs, except coxae, mixed brown, particularly fore femora and tibiae and hind femora.

Head. Apex of clava with an indistinct oblique truncation which is much shorter than ventral margin of

clava (Fig. 160); posterior ocellus separated from occipital margin by slightly more than half its major diameter; frontovertex fairly smooth with shallow coriaceous sculpture. Relative measurements of head of holotype: maximum head width 48, width of frontovertex at median ocellus 12.5, malar space 19, eye length 34, eye width 26, POL 6, OOL 2, scape length 20, other proportions of antenna as in Fig. 160.

Thorax. Relative measurements of forewing of holotype: length 134, maximum width 55, length of submarginal vein 51, of marginal vein 6, of stigmal vein 8, of postmarginal vein 6. Base of forewing as in Fig. 163.

Gaster. Exserted part of ovipositor about half length of mid tibial spur. Relative measurements of gaster of paratype: length of ovipositor 33, length of gonostylus 13 [mid tibia 51, mid tibial spur 13].

♂. Unknown.

DISTRIBUTION. Trinidad.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, El Tucuche (S. slope), 25.vii.1976 (*J. S. Noyes*) (BMNH).

Paratype. 1 ♀, same data as holotype (BMNH).

COMMENTS. The genus also includes *Desobius sylvicola* (De Santis, 1967a: 71) (**comb. n.** from *Tyndarichus*) from Argentina. I have also examined a possible ten further undescribed species from Trinidad, St Vincent (BMNH), Ecuador, Brazil and Panama (CNC, Ottawa), differing in the sculpture of the frontovertex, relative positions of ocelli, proportions of antennal segments, length of exserted part of ovipositor and coloration. The genus also occurs in India and possibly in Europe (*Coccidencyrus pinicola* Mercet and *Parageniaspis montana* Mercet may belong here) and Australia. See comments under *Amaurilyma*.

DICARNOSIS Mercet

(Key couplet: ♀ 64)

Dicarnosis Mercet, 1921: 141. Type-species: *Dicarnosis superbus* Mercet, by monotypy.

Neither *blanchardi* De Santis, 1972b: 48 nor *ogloblini* De Santis, 1972b: 48 are correctly placed here, although originally described in *Dicarnosis*: *D. ogloblini* belongs to *Metaphycus* and *blanchardi* very probably belongs to an undescribed genus near *Metaphycus*.

DIVERSINERVUS Silvestri

(Key couplets: ♀ 56; ♂ 64, 103)

Diversinervus Silvestri, 1915a: 301. Type-species: *Diversinervus elegans* Silvestri, by monotypy.

Cheiloneuroides Girault, 1915d: 96. Type-species: *Cheiloneuroides bicristatus* Girault, by monotypy.

INCLUDED SPECIES. Ten, one of which is found in the Neotropics: *elegans* Silvestri.

REFERENCE. Key to world species: Hayat, Alam & Agarwal (1975: 39–41).

DISTRIBUTION. Brazil, Peru. World: cosmopolitan.

BIOLOGY. Parasites of Coccidae (Homoptera).

COMMENTS. Placed in the tribe Cheiloneurini.

ECHTHRODRYINUS Perkins

(Key couplets: ♀ 206, 257; ♂ 122, 145. Fig. 91)

Echthrodryinus Perkins, 1906: 252. Type-species: *Echthrodryinus destructor* Perkins, by monotypy.

INCLUDED SPECIES. Six, one of which is from the Neotropics: *saccharalis* Gordh & Trjapitzin; also a further four or five undetermined species from Trinidad, Brazil and Guyana (BMNH; CNC, Ottawa).

REFERENCE. Revision: Gordh & Trjapitzin (1978).

DISTRIBUTION. Venezuela, Brazil, Trinidad, Guyana. World: cosmopolitan.

BIOLOGY. Hyperparasites via other parasitic Hymenoptera (mainly Dryinidae and Braconidae).

COMMENTS. Two of the undetermined species that I have included in this genus are perhaps atypical; one is very common in South America and has been reared solely from syrphid (Diptera) puparia, the other has the thorax exceptionally deep and the body very squat. The former is best placed in the present genus even though the stigmal vein forms a slightly greater angle with the postmarginal vein than is usual for this genus.

Placed in the tribe Microteryni, subtribe Syrphophagina. Some species of this genus strongly resemble some species of *Ooencyrtus* and *Syrphophagus*. It can best be separated from the latter by the relative length of the scutellum (see key), and from the former by the much longer postmarginal vein and more strongly clavate antennae.

ECHTHROPLEXIELLA Mercet

(Key couplet: ♂ 32)

Echthroplexiella Mercet, 1921: 183. Type-species: *Echthroplexiella submetallica* Mercet, by original designation.

INCLUDED SPECIES. Twenty, one of which is found in the Neotropics: *josephi* De Santis, 1965: 4.

DISTRIBUTION. Argentina. World: Palaearctic region.

BIOLOGY. Parasites or hyperparasites (via other Encyrtidae) on Eriococcidae (Homoptera).

COMMENTS. I am very doubtful about the generic placement of *josephi*. The unique holotype male is dissected on a slide and may be a brachypterous male *Metaphycus*.

ECTROMA Westwood

(Key couplet: ♀ 38)

Ectroma Westwood, 1833: 344. Type-species: *Ectroma fulvescens* Westwood, by monotypy.

Metallon Walker, 1848: 219. Type-species: *Metallon acacallis* Walker, by monotypy.

Pezobius Förster, 1860: 129. Type-species: *Pezobius polychromus* Förster, by monotypy.

INCLUDED SPECIES. Eleven, one of which is found in the Neotropics: *semifacta* De Santis, 1972b: 52.

DISTRIBUTION. Argentina. World: Palaearctic region.

BIOLOGY. Unknown.

COMMENTS. I have examined the holotype of *semifacta* and it appears to be correctly assigned to *Ectroma*.

Placed in the tribe Miraini, subtribe Mayridiina.

ECTROMATOPSIS Compere

(Key couplets: ♀ 35; ♂ 99)

Ectromatopsis Compere, 1947: 13. Type-species: *Ectroma americanum* Howard, by monotypy.

INCLUDED SPECIES. One: *americana* (Howard, 1898b: 248).

DISTRIBUTION. Mexico. World: Nearctic region.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Very probably best placed in the tribe Anagyrini.

ENCYRTUS Latreille

(Key couplets: ♀ 94; ♂ 62, 73, 87. Figs 49, 136)

Encyrtus Latreille, 1809: 31. Type-species: *Chrysis infida* Rossi, by designation of Latreille (1810: 436).*Eucomys* Förster, 1856: 32. Type-species: *Encyrtus swederi* Dalman, by original designation.*Comys* Förster, 1856: 144. [Replacement name for *Eucomys* Förster.]*Howardia* Dalla Torre, 1897: 86. Type-species: *Bothriothorax peckhami* Ashmead, by monotypy.
[Homonym of *Howardia* Berlese, 1896.]*Howardiella* Dalla Torre, 1898: 228. [Replacement name for *Howardia* Dalla Torre.]*Allorhypoideus* Brèthes, 1916b: 425. Type-species: *Allorhypoideus mirabilis* Brèthes, by monotypy.*Prorhypoideus* Brèthes, 1921b: 80. Type-species: *Prorhypoideus baezi* Brèthes, by monotypy.

INCLUDED SPECIES. Ninety-five, most of which are probably incorrectly placed, eight from the Neotropics: *baezi* (Brèthes), *bicolor* (Howard), *haywardi* De Santis, *infelix* (Embleton, 1902: 223), *lecaniorum* (Mayr), *littoralis* (Blanchard), *mexicanus* (Girault, 1917b: 21), *vianai* De Santis; also a further two undetermined species from Venezuela and Brazil (BMNH).

REFERENCE. Revision of species from Argentina: De Santis (1964: 314–332).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Coccidae (Homoptera).

COMMENTS. Placed in the tribe Encyrtini.

Encyrtus conformis Howard

(Key couplet: ♀ 180)

Encyrtus conformis Howard, 1897: 152.

I am unable to place this species, although it may be close to *Exoristobia*, but differs in the eyes being naked, the scutellum much more convex and the propodeum relatively longer. For redescription of species see Noyes (1979: 152–154).

Encyrtus quadricolor Howard*Encyrtus quadricolor* Howard in Riley, Ashmead & Howard, 1894: 93.

Type lost. The description may refer to a male *Rhytidothorax* which has lost the conspicuous setae on the frontovertex or perhaps a male *Habrolepoidea*. The species may be recognizable if further material is collected in St Vincent, but until that time the name should be considered a nomen dubium.

EPIENCYRTUS Ashmead

(Key couplets: ♀ 137, 241. Fig. 101)

Epiencyrtus Ashmead, 1900: 396. Type-species: *Encyrtus thyreodontis* Ashmead, by original designation.

INCLUDED SPECIES. Two, one an undetermined species from Panama (CNC, Ottawa).

DISTRIBUTION. Panama. World: Nearctic region.

BIOLOGY. Hyperparasite of other Encyrtidae parasitic in larvae of Lepidoptera.

COMMENTS. Placed in the tribe Cheiloneurini, subtribe Epiencyrtina. For key to related genera see Trjapitzin & Gordh (1978b).

ERICYDNUS Walker

(Key couplets: ♀ 116; ♂ 67. Fig. 53)

Ericydnus Walker, 1837: 363. Type-species: *Ericydnus paludatus* Walker, by designation of Westwood (1840: 72).

Grandoriella Domenichini, 1951: 171. Type-species: *Grandoriella lamasi* Domenichini, by monotypy. **Syn. n.**

INCLUDED SPECIES. Thirteen, one of which is found in the Neotropics: *lamasi* (Domenichini, 1951: 173) (**comb. n.**).

REFERENCE. World revision: Kerrich (1967: 166–180).

DISTRIBUTION. Peru, Panama. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. I do not consider the differences between *Grandoriella* and *Ericydnus* warrant separate generic status. The Australian species belonging to this genus are intermediate between the two genera.

Placed in the tribe Ericydnini (*Grandoriella* is placed in a separate tribe of its own by Trjapitzin (1973a), i.e. Grandoriellini).

EURYRHOPALUS Howard

(Key couplets: ♀ 142, 250; ♂ 17)

Euryrhopalus Howard, 1898b: 237. Type-species: *Euryrhopalus schwarzi* Howard, by monotypy.

Synaspidia Timberlake, 1924: 397. Type-species: *Synaspidia pretiosa* Timberlake, by monotypy.

INCLUDED SPECIES. Nine, four of which are found in the Neotropics: *kirkpatricki* (Kerrich), *pretiosus* (Timberlake), *propinquus* Kerrich, *pulchrrior* Kerrich.

REFERENCE. World revision: Kerrich (1967: 235–246).

DISTRIBUTION. Mexico, Guatemala, Jamaica, Trinidad, Guyana, Panama, Colombia. World: Nearctic region and Hawaii.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Neodiscodini.

EXORISTOBIA Ashmead

(Key couplets: ♀ 85, 204, 256. Figs 167–169)

Exoristobia Ashmead, 1904b: 15. Type-species: *Exoristobia philippinensis* Ashmead, by monotypy.

INCLUDED SPECIES. Three, none of which is found in the Neotropics, but three undetermined species from Trinidad and St Vincent (BMNH).

REFERENCE. Revision: Subba Rao (1970).

DISTRIBUTION. Trinidad, St Vincent. World: Oriental, Australian and Ethiopian regions.

BIOLOGY. Parasites of Syrphidae and Tachinidae (Diptera).

COMMENTS. *Encyrtus conformis* Howard may also belong to *Exoristobia*, but differs in having a rather more convex scutellum and relatively longer propodeum. The species from the Neotropics differ from the other known species in having relatively longer funicle segments.

I am unable to place the genus according to Trjapitzin's (1973b) classification of the Encyrtidae.

FORCIPESTRICIS Burks

(Key couplets: ♀ 227, 237, 239; ♂ 30, 91, 109. Figs 98, 99)

Forcipestricis Burks, 1968: 237. Type-species: *Forcipestricis gaseaui* Burks, by monotypy.

INCLUDED SPECIES. Three, two of which are found in the Neotropics: *portoricensis* Gordh (1975: 239), *sordidus* (Howard, 1897: 153); also at least a further 25 undetermined species from the West Indies, Brazil and Ecuador (BMNH; CNC, Ottawa).

DISTRIBUTION. Puerto Rico, Brazil, Ecuador, West Indies. World: Nearctic region.

BIOLOGY. Parasites of Ceratopogonidae (Diptera).

COMMENTS. Apparently a large and taxonomically difficult genus. The presence of the tubercles or pits on the scutellum (Figs 98, 99) seems fairly unique in the Encyrtidae, although they are present in the probably unrelated genera *Amaurilyma* and *Desobius*. The pits in these two genera are very difficult to see, even on slide mounted material, whereas those of *Forcipestricis* can be seen, with practice, on dry mounted material. Useful characters for separating the species into groups are: number of teeth in mandibles (bi- or tridentate), scutellum flat or convex, scutellum with sculpture or smooth and distribution of pits i.e. grouped or scattered.

The genus cannot be placed according to Trjapitzin's (1973b) classification of the Encyrtidae.

GAHANIELLA Timberlake

(Key couplets: ♀ 68, 79, 166, 196; ♂ 108. Fig. 37)

Gahaniella Timberlake, 1926: 23. Type-species: *Gahaniella californica* Timberlake, by original designation.

INCLUDED SPECIES. Three, all from the Neotropics: *californica* Timberlake, *saissetiae* Timberlake and *tertia* Kerrich.

REFERENCE. Kerrich (1953: 800–802).

DISTRIBUTION. Argentina, Brazil, Uruguay, Cuba, Trinidad, Virgin Islands. World: Nearctic region.

BIOLOGY. Hyperparasites via other Encyrtidae in Coccidae and Pseudococcidae, possibly also primary parasites of Coccidae (Homoptera).

COMMENTS. Placed in the tribe Microteryni by Trjapitzin & Gordh (1978b).

GONZALEZIA De Santis

(Key couplets: ♀ 179, ♂ 90)

Gonzalezia De Santis, 1964: 292. Type-species: *Gonzalezia gloriosa* De Santis, by monotypy.

INCLUDED SPECIES. One: *gloriosa* De Santis, 1964: 294.

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. Very similar to *Cerchysius* and *Aseirba* from which it can easily be separated using the characters given in the key, notably the relatively small eyes.

I am unable to place the genus according to Trjapitzin's (1973b) classification of the Encyrtidae.

GRISSELLIA gen. n.

(Key couplets: ♀ 202, 247; ♂ 143. Figs 104, 110, 164–166)

Type-species: *Grissellia terebrata* sp. n.

♀. *Head*. In side view moderately deep, most rounded level with top of antennal scrobes, frontovertex slightly convex. Eye slightly longer than broad with short inconspicuous pale hairs and overreaching occipital margin which is rounded. Malar space slightly more than half to three-fifths length of eye with malar sulcus weakly indicated. Frontovertex, at narrowest point, about one-quarter of head width, ocelli forming an acute angle of about 60°, posterior ocellus separated from occipital margin by about one and a half times to twice its own diameter and from eye margin by less than half its own diameter. Centre of clypeus sometimes slightly produced downwards and outwards. Antennal scrobes moderately deep, fairly long and joined dorsally, their uppermost point slightly more than half way between antennal toruli and anterior ocellus, interantennal prominence dorsally rounded and about one and a half times as long as a

torulus, antennal torulus separated from mouth margin by about half its own length and from other torulus by about one and a half times its own length, dorsal margin slightly lower than lowest eye margin; scape subcylindrical or slightly expanded and flattened in middle, pedicel conical, longer than first two funicle segments together, funicle six-segmented with segments cylindrical and distinctly transverse to longer than broad, gradually broadening apically, clava three-segmented with apex rounded, slightly broader than and more than half as long as funicle; longitudinal sensilla on fifth and sixth funicle segments and clava. Frontovertex with punctiform-reticulate sculpture between ocelli gradually becoming shallower and more irregular towards top of antennal scrobes, cheeks with longitudinally elongate coriaceous sculpture but quite smooth immediately below eyes, antennal scrobes smooth and polished. Mandibles with one or two acute teeth and a truncation, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. Moderately deep in side view with mesoscutum and scutellum flat. Mesoscutum without notaular lines, about one half broader than long, axillae separated by posterior margin of mesoscutum, scutellum dorsally flat and slightly broader than long, propodeum centrally less than one-eighth as long as scutellum. Pronotum, mesoscutum and axillae with coriaceous sculpture, scutellum with deep punctate-reticulate sculpture, sides and extreme apex smooth, mesopleuron with shallow, irregularly elongate sculpture, propodeum smooth. Forewing hyaline, slightly more than twice as long as broad; basal cell sparsely hairy in distal half, naked proximally, speculum open and not interrupted; submarginal vein with an apical hyaline break, marginal vein about twice as long as broad, slightly longer than or about as long as postmarginal and about half as long as stigmal. Hindwing about four times as long as broad. Mid tibial spur nearly as long as mid basal tarsal segment.

Gaster. About as long as thorax, cerci at about one-third, apex of hypopygium reaching to about one-half to two-thirds along gaster, paratergites absent, epipygium occasionally with apex very acute and overhanging base of ovipositor as in *Pseudencyrtus*, exerted part of ovipositor from one-seventh to one-third as long as gaster. Ovipositor about one and a half to three times as long as mid tibia, gonostylus about two-fifths to as long as mid tibia.

♂. Differs from female as follows: antennal scrobes nearly reaching anterior ocellus, antennae as in Fig. 165, frontovertex at narrowest point slightly less than one half of head width, scutellum slightly convex and gaster shorter than thorax. The genitalia are unknown since the only available male is dry mounted.

Named in honour of Dr E. E. Grissell.

Grissellia terebrata sp. n.
(Figs 104, 110, 164, 166)

♀. Length (excluding ovipositor): 1.24–1.43 mm (holotype 1.37 mm).

Colour. Head, thorax (except scutellum) and gaster generally dark brown with slight blue, green and brassy reflections, antennal scrobes and cheeks with stronger purple or blue reflections. Antennae with scape dark brown, paler apically and with some metallic green reflections, pedicel basally dark brown, apex of pedicel and flagellum pale brown; scutellum dark green, sculptured area matt and with some brassy reflections, smoother areas shiny and tinged blue; legs with coxae, femora and tibiae brown with apices of tibiae and tarsi yellow; basal tergite of gaster metallic blue-green, ovipositor sheaths dark brown.

Head. Centre of clypeus very slightly produced outwards and downwards; mandibles with two teeth and a truncation (Fig. 104). Relative measurements of head of holotype: maximum head width 67, frontovertex width at median ocellus 18, malar space 25, eye length 41, eye width 35, POL 8, OOL 2, scape length 30, other proportions of antennae as in Fig. 164.

Thorax. Relative measurements of forewing of holotype: length 172, maximum width 76, length of submarginal vein 70, of marginal vein 5, of stigmal vein 10, of postmarginal vein 5; of hindwing: length 117, maximum width 29. Base of forewing as in Fig. 110.

Gaster. Slightly longer than thorax, epipygium very elongate and very acute, apex of hypopygium reaching to about two-thirds along gaster, exerted part of ovipositor about one-third as long as gaster. Relative measurement of paratype: ovipositor length 158, gonostylus length 62 [mid tibia length 59]. Ovipositor as in Fig. 166.

♂. Unknown.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀. **Brazil**: Santa Catarina, Nova Teutonia, 15.x.1949 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 2 ♀, Nova Teutonia, 17.x.1949, 20.x.1949 (*F. Plaumann*) (BMNH).

COMMENTS. Two additional undescribed species from Brazil and St Vincent (BMNH), also an undescribed species from India (BMNH).

The genus is very close to *Echthrodryinus* and *Ooencyrtus* (tribe Microterytini) but differs from both in having a flat scutellum with punctate sculpture and exerted ovipositor, and from *Ooencyrtus* in having a long postmarginal vein. In both *Echthrodryinus* and *Ooencyrtus* the scutellum is rather evenly convex (except perhaps in *Ooencyrtus chrysopae* where the scutellum appears to be flat, but this may be due to the scutellum collapsing as a result of the small size of this species), and rarely with punctate sculpture, the ovipositor is usually hidden, although sometimes slightly exerted, and in *Ooencyrtus* the postmarginal vein is short or absent.

GYRANUSOIDEA Compere

(Key couplets: ♀ 70; ♂ 96)

Gyranoidea Compere, 1947: 17. Type-species: *Gyrana citrina* Compere, by monotypy.

INCLUDED SPECIES. Ten, none from the Neotropics, but two undetermined species from Brazil and Trinidad (BMNH).

DISTRIBUTION. Brazil, Trinidad. World: Hawaii, Africa, India, Australia.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Anagyrini, subtribe Anagyrina. Close to *Anagyrus* and probably should be considered synonymous. See 'Comments' under *Anagyrus*.

HABROLEPIS Förster

(Key couplets: ♀ 53; ♂ 7. Fig. 32)

Habrolepis Förster, 1856: 34. Type-species: *Encyrtus nubilipennis* Walker, by original designation.

Gymnoneura Risbec, 1951: 157. Type-species: *Gymnoneura bambeyi* Risbec, by monotypy.

INCLUDED SPECIES. Twenty-one, two of which are found in the Neotropics: *dalmanii* (Westwood), *rouxi* Compere.

REFERENCE. Annecke & Mynhardt (1970: 128–146).

DISTRIBUTION. Chile, Bermuda. World: cosmopolitan.

BIOLOGY. Parasites of Diaspididae and Asterolecaniidae (Homoptera).

COMMENTS. Placed in the tribe Habrolepidini, subtribe Habrolepidina.

HABROLEPOIDEA Howard

(Key couplet: ♀ 227)

Habrolepoidea Howard in Riley, Ashmead & Howard, 1894: 89. Type-species: *Habrolepoidea glauca* Howard, by monotypy.

INCLUDED SPECIES. Six, two of which are found in the Neotropics: *glauca* Howard (Noyes, 1979: 157), *celia* Girault, 1917b: 22.

DISTRIBUTION. St Vincent.

BIOLOGY. Unknown.

COMMENTS. The species described under *Habrolepoidea* by Girault from North America and Australia are very probably incorrectly placed. Girault (1920: 187) synonymized *Zarhopaloides* Girault with *Habrolepoidea* but from the description of the type-species this is evidently incorrect. I have not seen the type of *celia*.

I am unable to place the genus satisfactorily according to Trjapitzin's (1973b) classification of the Encyrtidae, but it may belong to the Microteriyini.

HAMBLETONIA Compere

(Key couplets: ♀ 51; ♂ 18. Figs 29, 31, 116, 118)

Hambletonia Compere, 1936: 172. Type-species: *Hambletonia pseudococcina* Compere, by monotypy.

INCLUDED SPECIES. One: *pseudococcina* Compere, 1936: 173.

DISTRIBUTION. Brazil, Argentina, Colombia, Puerto Rico, West Indies. World: Nearctic region, Hawaii.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Chrysoplatygerini, subtribe Chrysoplatygerina (Trjapitzin & Gordh, 1978b: 648).

HELEGONATOPUS Perkins

(Key couplets: ♀ 176; ♂ 15, 118. Figs 114, 140)

Helegonatopus Perkins, 1906: 257. Type-species: *Helegonatopus pseudophanes* Perkins, by monotypy.

Schedioides Mercet, 1919a: 96. Type-species: *Schedioides formosus* Mercet, by monotypy.

Hazmburkia Hoffer, 1954: 172. Type-species: *Hazmburkia dimorpha* Hoffer, by monotypy.

Masencyrtus Hoffer, 1960: 98. Type-species: *Masencyrtus concupiens* Hoffer, by monotypy.

Paludencyrtus Hoffer, 1965: 16. Type-species: *Paludencyrtus nikolskajae* Hoffer, by monotypy.

INCLUDED SPECIES. Twelve, one of which is found in the Neotropics: *pseudophanes* Perkins, 1906: 257, also one undescribed species from Trinidad (BMNH).

REFERENCE. Szelenyi (1972: 349–352).

DISTRIBUTION. Argentina, Trinidad, St Vincent, Jamaica. World: cosmopolitan.

BIOLOGY. Hyperparasites of Auchenorrhyncha (Homoptera) via Dryinidae (Hymenoptera).

COMMENTS. Placed in the tribe Chalcerinyini.

HELMECEPHALA gen. n.

(Key couplets: ♀ 81, 185; ♂ 112. Figs 88, 170–173)

Type-species: *Helmecephala albisetosa* sp. n.

♀. *Head*. In profile moderately deep and with frontovertex and face evenly rounded, except for lower parts of face (below ventral eye margin) which is flat. Eye slightly longer to one-third longer than broad, naked and dorsally reaching occipital margin which is sharply marginal to base of mandibles. Malar space about two-thirds length of eye and with malar sulcus absent. Frontovertex at narrowest point slightly more than one-third head width, ocelli forming an acute angle of about 50–85°, posterior ocellus separated from occipital margin by about its own diameter and almost touching inner eye margin. Antennal scrobes shallow and V-shaped, meeting dorsally, not reaching half way from antennal toruli to anterior ocellus and shiny, antennal torulus separated from mouth margin and from other torulus by half its own length, its dorsal margin below lowest level of eyes by about its own length; scape subcylindrical or slightly flattened and expanded in middle, pedicel conical, longer than first funicle segment which is longer than broad, funicle six-segmented with segments cylindrical, becoming shorter and broader distally so that distal segments are distinctly transverse, clava three-segmented, longer than half length of funicle and with a long oblique truncation; longitudinal sensilla on all flagellar segments. Frontovertex, face and cheeks with deep thimble-punctured sculpture, punctures mostly separated by less than their own diameters and shiny

bottomed, punctures extending down interantennal prominence to clypeal margin, between punctures rather irregular, raised shallow coriaceous to reticulate sculpture which is usually not very shiny and contrasts rather strongly, in colour and shine, with punctures. Mandibles with two long, narrow, curved, acute teeth and a truncation, occasionally upper tooth shorter and broader, maxillary palpi four-segmented, the apical segment as long or longer than the first three together, labial palpi three-segmented.

Thorax. In side view deep with mesoscutum slightly convex and scutellum moderately convex. Pronotum with strongly concave posterior margin, mesoscutum without notaular lines, less than a half broader than long, axillae slightly separated by posterior margin of mesoscutum, scutellum slightly broader than long and with apex rounded, propodeum short and with spiracles surrounded by dense, appressed, white setae. Pronotum, mesoscutum and axillae with coriaceous sculpture, scutellum with fairly deep, irregular, reticulate sculpture (distinctly deeper than that on mesoscutum) which becomes shallower and of larger mesh towards sides and apex, mesopleura with raised longitudinally strigose sculpture, propodeum more or less smooth but with irregular, shallow sculpture. Forewing hyaline, about two and a half times as long as broad; basal cell completely pilose but with setae in middle very pale and inconspicuous, those towards base and apex rather darker and stronger, costal cell with setae scattered over whole of dorsal surface, speculum closed but not interrupted, extreme apex of wing with cilia absent, marginal cilia along anterior margin very short; submarginal vein without an apical hyaline break, marginal vein about two to three times as long as broad, about as long as stigmal vein and about twice as long as postmarginal. Hindwing about three times as long as broad. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. Slightly shorter than thorax, cerci in basal one-third, paratergites absent, apex of hypopygium reaching about half way along gaster, ovipositor slightly protruding to exerted part, being about one-third as long as gaster, and with sheaths slightly flattened. Ovipositor nearly one and a half times as long as mid tibia, gonostylus about one-third as long as mid tibia.

♂. Essentially same as female except antennal toruli are higher on head, i.e. separated from mouth margin by about one and a half times to twice their own lengths and nearly level with lower eye margins; antennae as in Fig. 170 and genitalia as in Fig. 171; aedeagus slightly longer than mid tibial spur, each digitus with one very strong spine.

***Helmecephala albisetosa* sp. n.**

(Figs 88, 172, 173)

♀. Length (excluding ovipositor): 1.70–1.90 mm (holotype 1.70 mm).

Colour. Head dark brownish purple and slightly shiny, thimble-punctures very shiny green, each with a single, slightly flattened white hair arising from it, scape yellowish, pedicel dark brown, yellowish at apex and ventrally, funicle testaceous yellow, dorsally and distally darker, clava and sixth funicle segment brown; pronotum and mesoscutum dark brown with a strong purple shine, mesoscutum covered (except anteriorly) with numerous appressed, white setae, scutellum dark green, purplish in centre, with some bluish reflections, mesopleuron mixed shining blue and purple, propodeum shiny, metallic blue medially; coxae, femora and hind tibia black, knees testaceous, fore and mid tibiae proximally dark brown, gradually becoming testaceous distally, tarsi yellowish white gradually darkening to testaceous distally, mid tibial spur white, brown at apex; gaster black, basal tergite shining greenish blue mixed with some purple.

Head. Ocelli forming an angle at about 75–80°. Relative measurements of head of holotype: head width 99, frontovertex width at median ocellus 36, malar space 45, eye length 61, eye width 51, POL 26, OOL 2, scape length 48, other proportions of antennae as in Fig. 88. There is some variation in the relative length of the scape, from slightly less than to slightly longer than malar space and therefore scape may vary from about four and a half to five times as long as broad.

Thorax. Relative measurements of forewing of holotype: length 204, maximum width 84, length of submarginal vein 85, of marginal vein 10, of stigmal vein 10, of postmarginal vein 5. Base of forewing as in Fig. 172.

Gaster. Exserted part of ovipositor slightly less than one-fifth of gaster or half of mid tibial spur. Relative measurements of gaster of paratype: length of ovipositor 136, of gonostylus 30 [mid tibia length 106]. Genitalia as in Fig. 173.

♂. Unknown.

DISTRIBUTION. Trinidad.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: Nariva, Ecclesville, 29.vii.1976 (*J. S. Noyes*) (BMNH).

Paratypes. **Trinidad**: 1 ♀, St Andrew, Oropuche, 28.vi.1976; 1 ♀, St George, Aripo Valley, 4.viii.1976; 1 ♀, St Patrick, Bonasse, 12.viii.1976; 2 ♀, St Patrick, Coora, 14.viii.1976; 1 ♀, St George, Tumpuna Reserve, 9.viii.1976 (*J. S. Noyes*); 1 ♀, Curepe, i.1978 (*F. D. Bennett*). (BMNH; CNC, Ottawa; MLP, Argentina.)

COMMENTS. Three further undescribed species from Trinidad (BMNH; CNC, Ottawa) differ in sculpture of frontovertex, coloration of setae on mesoscutum, proportions of antennal segments and relative length of exerted part of ovipositor.

The shape of the head suggests that the nearest relatives to *Helmecephala* are the genera placed in the tribe Prionomasticini (Trjapitzin & Gordh, 1978b). This is very probably true, but *Helmecephala* appears to be much less primitive than any of the genera included in this tribe. The cerci are well advanced on the gaster and the dentition of the mandibles is more developed. The venation is also very different, the marginal vein being relatively long and the postmarginal and stigmal veins relatively short. The antennae of the male are also considerably different from those of the males of this tribe.

HEMAENASIUS Ashmead

(Key couplets: ♀ 63, 144, ♂ 92. Figs 51, 59)

Hemaenasius Ashmead, 1900: 374. Type-species: *Hemaenasius confusus* Ashmead, by monotypy.

Epaenasomyia Girault, 1917c: 3. Type-species: *Epaenasomyia varicornis* Girault, by monotypy.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *confusus* Ashmead, 1900: 374; also one undetermined species from Panama (CNC, Ottawa).

DISTRIBUTION. Brazil, Panama. World: Nearctic region.

BIOLOGY. Unknown.

COMMENTS. Placed in the tribe Discodini, subtribe Hemaenasiina by Trjapitzin & Gordh (1978b).

HEMENCYRTUS Ashmead

(Key couplets: ♀ 105, 120, 133, 153, 164, 180, 185, 189; ♂ 104, 108, 112. Fig. 60)

Hemencyrtus Ashmead, 1900: 374. Type-species: *Hemencyrtus herbertii* Ashmead, by monotypy.

INCLUDED SPECIES. Three: *brasiliensis* (Ashmead) (comb. n. from *Bothriothorax*), *casali* De Santis, 1967a: 69 and *herbertii* Ashmead, 1900: 375; also a further five or six undetermined species from Trinidad, Brazil, Panama and Ecuador (BMNH; CNC, Ottawa).

DISTRIBUTION. Argentina, Brazil, Ecuador, Panama, Trinidad.

BIOLOGY. Unknown.

COMMENTS. I have examined three syntype females of *Hemencyrtus herbertii*. The one which fits the description best (labelled: 'Aug., Chapada, H. H. Smith coll, Type No. 41381 U.S.N.M.', here designated LECTOTYPE) is lacking wings; of the other two, one is in good condition but fits the description poorly and the other is lacking antennae and one pair of wings. All are congeneric but may not be conspecific.

Bothriothorax brasiliensis (holotype ♂ examined) is best placed in *Hemencyrtus* although it has some characteristics in common with *Zeteticontus*.

The species included in this genus appear to fall into two distinct groups: those where the scutellum is very flat and with a distinct translucent apical flange (includes *herbertii* and *casali*) and those where the scutellum is convex and the flange is distinct or absent (includes *brasiliensis*).

The genus belongs to the tribe Bothriothoracini.

HEXACLADIA Ashmead

(Key couplets: ♀ 112; ♂ 5)

Hexacladia Ashmead, 1891: 456. Type-species: *Hexacladia smithii* Ashmead, by monotypy.
Thysanomastix Perkins, 1907: 55. Type-species: *Thysanomastix koebelei* Perkins, by monotypy.
Sophencyrtus Crawford, 1911: 275. Type-species: *Sophencyrtus townsendi* Crawford, by monotypy.

INCLUDED SPECIES. Seven, four of which are found in the Neotropics: *blanchardi* De Santis, *mexicana* Girault, *smithii* Ashmead, *townsendi* Crawford; also a further five undescribed species (BMNH; CNC, Ottawa).

REFERENCE. Revision: Burks (1972).

DISTRIBUTION. Argentina, Brazil, Ecuador, Trinidad. World: Nearctic region.

BIOLOGY. Parasites of adult Scutelleridae and Pentatomidae (Heteroptera).

COMMENTS. Placed in the tribe Prionomasticini, subtribe Hexacladiina.

HOMALOPODA Howard

(Key couplets: ♀ 4; ♂ ?)

Homalopoda Howard in Riley, Ashmead & Howard, 1894: 91. Type-species: *Homalopoda cristata* Howard, by monotypy.

INCLUDED SPECIES. One: *cristata* Howard (Noyes, 1979: 157); also a further four undetermined species (BMNH; CNC, Ottawa; USNM, Washington).

DISTRIBUTION. Trinidad, St Vincent, Panama.

BIOLOGY. Unknown, but probably parasites of Diaspididae (Homoptera).

COMMENTS. Placed in the tribe Habrolepidini, subtribe Habrolepidina.

HOMALOTYLUS Mayr

Homalotylus Mayr, 1876: 752. Type-species: *Encyrtus flaminus* Dalman, by designation of Ashmead (1900: 377).

Nobrimus Thomson, 1876: 116. Type-species: *Encyrtus flaminus* Dalman, by designation of Timberlake (1919a: 134).

Mendozaniella Brèthes, 1913: 97. Type-species: *Mendozaniella mirabilis* Brèthes, by monotypy.

Hemaenasoidea Girault, 1916a: 307. Type-species: *Hemaenasoidea oculata* Girault, by monotypy.

Lepidaphycus Blanchard, 1936: 13. Type-species: *Lepidaphycus bosqi* Blanchard, by monotypy.

Neoaenasioidea Agarwal, 1966: 71. Type-species: *Neoaenasioidea indica* Agarwal, by monotypy.

INCLUDED SPECIES. Twenty-eight, seven of which are found in the Neotropics: *brevicauda* Timberlake, *cockerelli* Timberlake, *flaminus* (Dalman), *latipes* Girault, *mexicanus* Timberlake, *mirabilis* (Brèthes), *terminalis* (Say); also a further two undetermined species from Panama and Surinam (BMNH; CNC, Ottawa; CIBC, Trinidad).

REFERENCE. Revision: Timberlake (1919a: 133–170).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of coccinellid larvae (Coleoptera).

COMMENTS. Placed in the tribe Homalotylini, subtribe Homalotylinina.

HOMOSEMION Annecke

(Key couplet: ♀ 49. Fig. 23)

Homosemion Annecke, 1967: 119. Type-species: *Homosemion bennetti* Annecke, by monotypy.

INCLUDED SPECIES. One: *bennetti* Annecke, 1967: 157.

DISTRIBUTION. Trinidad.

BIOLOGY. Parasites of Margarodidae (Homoptera).

COMMENTS. Placed in the tribe Cerapterocerini.

HOPLOPSIS Destefani

(Key couplet: ♀ 126)

Hoplopsis Destefani, 1889: 140. Type-species: *Hoplopsis mayri* Destefani, by monotypy.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *crisulata* De Santis, 1972b: 56.

DISTRIBUTION. Argentina, Brazil. World: Europe.

BIOLOGY. Unknown.

COMMENTS. Placed in the tribe Microteryini, subtribe Microteryina.

HUNTERELLUS Howard

(Key couplets: ♀ 62, 83; ♂ 71. Figs 34, 132)

Hunterellus Howard, 1908: 241. Type-species: *Hunterellus hookeri* Howard, by monotypy.

INCLUDED SPECIES. Three, one of which is found in the Neotropics: *hookeri* Howard, 1908: 241; also one undetermined species from Trinidad (BMNH).

DISTRIBUTION. Brazil, Trinidad, Puerto Rico, Cuba, Mexico. World: cosmopolitan.

BIOLOGY. Parasites of nymphs of Ixodidae (Acarina).

COMMENTS. Placed in the tribe Ixodiphagini.

ICEROMYIA gen. n.

(Key couplets: ♀ 57, 78; ♂ 103, 135. Figs 38, 44, 174–176)

Type-species: *Iceromyia flavifrons* sp. n.

♀. *Head*. In profile, moderately deep, most rounded level with top of antennal scrobes, frontovertex slightly convex. Eye nearly as broad as long, naked and reaching occipital margin which is sharp. Malar space slightly more than half length of eye, malar sulcus absent. Frontovertex, at narrowest, about one-eighth head width or twice diameter of anterior ocellus, ocelli forming an acute angle, posterior ocellus separated from occipital margin by about its own diameter and more or less touching eye margin. Antennal scrobes fairly deeply impressed, meeting dorsally and reaching about half way between toruli and anterior ocellus, antennal torulus separated from mouth margin by less than its own length and from other torulus by about one and a half times its length, its dorsal margin slightly below lowest margin of eye. Scape broadened and flattened, pedicel conical and about half length of funicle, funicle six-segmented, all segments transverse, lengthening and broadening distally, clava very large, three-segmented, longer than funicle and with a strong, apical oblique truncation; longitudinal sensilla on the apical two or three funicle segments and clava. Frontovertex with shallow coriaceous sculpture. Mandibles with two acute teeth and a truncation, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view, moderately deep and with mesoscutum and scutellum slightly convex. Mesoscutum without notaular lines, about a half broader than long, axillae more or less touching, scutellum about as long as broad and without apical tuft of setae but with two to six conspicuous longer setae, propodeum medially at most one-seventh as long as scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, scutellum with quite deep, longitudinally strigose sculpture tending towards reticulate in centre, mesopleuron with shallow, raised slightly elongate or strigose sculpture, propodeum smooth medially. Forewing hyaline or very slightly infumate in a small triangular area about half way along submarginal vein and across wing from marginal vein and extending to wing apex, becoming slightly paler distally, with a hyaline streak from apex of postmarginal vein to apex of stigmal vein, forewing about two and a half times as long as broad; basal cell more or less naked, but with a few transverse lines of setae

distally, speculum not interrupted and open; submarginal vein with an indistinct apical hyaline break, marginal vein slightly more than three times as long as broad, slightly longer than stigmal and about twice as long as postmarginal. Hindwing about four and a half times as long as broad. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. Slightly shorter than thorax. Cerci at about one-third, paratergites absent, apex of hypopygium reaching about half way along gaster, exerted part of ovipositor about half as long as gaster. Ovipositor (Fig. 176) more than one and a half times as long as gaster or about twice as long as mid tibia, gonostylus about as long as mid tibia.

♂. Differs from female as follows: head with antennal scrobes shallower and longer, reaching further than half way between toruli and anterior ocellus, antennal torulus higher on head, separated from mouth margin by more than its own length, its upper margin slightly below lowest level of eye; malar sulcus present; posterior ocellus separated from occipital margin by less than half its diameter, ocelli forming an angle of about 60°, frontovertex nearly one-third head width; antennae as in Fig. 174; sculpture of frontovertex rugose and partly reticulate between ocelli, gradually becoming shallower and coriaceous on lower parts of face and longitudinally strigose on cheeks; forewing completely hyaline with postmarginal vein about as long as stigmal; aedeagus about half as long as mid tibia.

Iceromyia flavifrons sp. n.
(Figs 38, 44, 174, 175)

♀. Length (excluding ovipositor): 1.85 mm.

Colour. Head yellow except for vertex between and behind ocelli and a line across clypeus and lower parts of genae which are dark brown, cheeks with conspicuous, long, dark setae; antenna, except for clava, yellowish orange, clava dark brown; pronotum, axillae and mesoscutum brown with purple, blue, green and brassy reflections, the reflected colour on the mesoscutum depending on angle viewed from; scutellum yellowish orange, more orange apically, propodeum dark orange medially, dark brown laterally, mesopleuron dark brown with purple and blue reflections, mesoscutum with sparse pale brown setae; legs yellow; forewings (Fig. 38) with basal area hyaline except for a small, triangular infusate spot about half way along and below submarginal vein, wing slightly infumate from level with apex of submarginal vein to apex, becoming paler distally; gaster dark brown, basal tergite with strong metallic green and purple sheen, ovipositor sheaths yellowish orange.

Head. Antennal scrobes more or less semicircular. Relative measurements of head: head width 104, frontovertex width at median ocellus 15.5, malar space 42, eye length 70, eye width 66, POL 8.5, OOL 0.5, scape length 51, other proportions of antenna as in Fig. 44.

Thorax. Mesopleuron with shallow reticulate sculpture, anterior half strigose. Relative measurements of forewing (Fig. 38): length 248, maximum width 97, other proportions as in Fig. 48.

Gaster. Relative measurements: length of exerted part of ovipositor 63, length of gaster 125, length from base of gaster to apex of hypopygium 67.

♂. Length: 1.56 mm.

Colour. Head and thorax black with weak metallic purple, green and brassy reflections; lower parts of face strongly metallic green; antennae yellow except clava which is pale brown; mesopleuron with distinct purple coloration; coxae dark brown, remainder of legs yellow; gaster dark brown. Relative measurements: head: width 92, frontovertex width at median ocellus 32, malar space 32, eye length 59, eye width 45, POL 13, OOL 2, scape length 38, other proportions of antennae as in Fig. 174; forewing: length 212, maximum width 99, length of submarginal vein 85, of marginal vein 10, other proportions as in Fig. 175.

DISTRIBUTION. Trinidad.

BIOLOGY. Reared from Margarodidae (Homoptera) (probably hyperparasitic on other Encyrtidae).

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: iv.1963, ex *Icerya montserratensis* Riley & Howard (*F. D. Bennett*) (BMNH).
Paratype. 1 ♂, same data as holotype (BMNH).

COMMENTS. Also a further undescribed species from Guyana reared from the same host as the type-species (BMNH).

Closely related to *Cheiloneurus* (tribe Cheiloneurini) but can be separated using the characters given in the key.

ISODROMUS Howard

(Key couplets: ♀ 140, 217; ♂ 48. Figs 58, 124)

Isodromus Howard, 1887: 488. Type-species: *Isodromus iceryae* Howard, by monotypy.

Parataneostigma Girault, 1915a: 275. Type-species: *Parataneostigma nigriaxillae* Girault, by monotypy.

INCLUDED SPECIES. Fourteen, one of which is found in the Neotropics: *iceryae* Howard; also a further undetermined species from Peru (BMNH).

REFERENCE. Revision: Timberlake (1919a: 176–190).

DISTRIBUTION. Argentina, Brazil, Chile, Peru, Mexico, Cuba. World: cosmopolitan.

BIOLOGY. Parasites of Chrysopidae and Hemerobiidae (Neuroptera).

COMMENTS. Placed in the tribe Homalotylini, subtribe Homalotyliina.

LEPTOMASTIDEA Mercet

(Key couplets: ♀ 113; ♂ 98)

Leptomastidea Mercet, 1916: 112. Type-species: *Leptomastidea aurantiaca* Mercet, by monotypy.

Tanaomastix Timberlake, 1918: 362. Type-species: *Paraleptomastix abnormis* Girault, by original designation.

Leptanusia De Santis, 1964: 80. Type-species: *Leptomastidea pseudococci* Brèthes, by monotypy. **Syn. n.**

INCLUDED SPECIES. Seventeen, five of which are found in the Neotropics: *abnormis* Girault, *antillicola* Dozier, 1937: 121, *bahiensis* (Compere) (**comb. n.** from *Leptomastix*), *dispar* (Kerrich) (**comb. n.** from *Leptomastix*) and *pseudococci* Brèthes (De Santis, 1964: 82).

REFERENCES. Mercet (1924: 252–258), Kerrich (1953: 790–791).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. I have examined the holotype of *Leptomastidea brethesi* Blanchard which was synonymized with *Leptomastidea pseudococci* Brèthes, the type-species of *Leptanusia*, by De Santis (1964: 82). It is a *Leptomastidea* belonging to the same group as *bahiensis* and *dispar*. It differs from all other species of *Leptomastidea* in having relatively shorter marginal cilia on the hindwing, but I do not think that this difference and the differences given by Trjapitzin (1971c: 86) warrant separate generic status. Kerrich (pers. comm.) suggested that *bahiensis* belongs to *Leptomastidea*.

The holotype male of *antillicola* Dozier has not been seen, but the species may be correctly placed in *Leptomastidea*.

Placed in the tribe Anagyrina, subtribe Leptomastideina.

LEPTOMASTIX Förster

(Key couplets: ♀ 119, 157; ♂ 99)

Leptomastix Förster, 1856: 34. Type-species: *Leptomastix histrio* Mayr, by monotypy through reference of Mayr (1876: 730).

Stenoterys Thomson, 1876: 115. Type-species: *Stenoterys orbitalis* Thomson, by monotypy.

Pseudleptomastix Girault, 1915a: 272. Type-species: *Pseudleptomastix squamulatus* Girault, by monotypy.

INCLUDED SPECIES. Thirty-seven, one of which is found in the Neotropics: *dactylopii* Howard (Dozier, 1927: 267), also one species from Mexico, near *squammulata* Girault, and a further species from Brazil (BMNH).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. The undetermined species from Brazil apparently has a seven-segmented funicle and two-segmented clava as in *Alamella* Agarwal, but since the venation is more typical of *Leptomastix* I include it in the latter.

Placed in the tribe Anagyrini, subtribe Anagyrina. See comments under *Anagyrus*.

LIRENCYRTUS gen. n.

(Key couplets: ♀ 162; ♂ 124. Figs 74, 177–181)

Type-species: *Lirencyrtus primus* sp. n.

♀. *Head*. In side view moderately deep with frontovertex and face more or less uniformly curved but mostly so level with top of antennal scrobes. Eye about one-third longer than broad, with numerous short hairs and reaching occipital margin which is sharp. Malar space from much less than to slightly more than half length of eye with malar sulcus absent or present. Frontovertex at narrowest point about one-third head width and with fairly conspicuous dark setae; ocelli more or less forming a right angle, posterior ocellus separated from occipital margin by less than its own diameter and from eye margin by about half its own diameter. Antennal scrobes moderately impressed and semicircular, meeting dorsally but quite short, not quite reaching half way from toruli to anterior ocellus; antennal torulus separated from mouth margin by slightly more than its own length and from other torulus by about one and a half times its own length, its dorsal margin about level with lowest margin of eye. Antenna with scape subcylindrical, pedicel conical and about as long as first funicle segment, all six funicle segments cylindrical and longer than broad, clava three-segmented, about half as long as and slightly broader than the funicle and with apex rounded, pointed or with a very short oblique truncation; longitudinal sensilla on all flagellar segments. Sculpture on frontovertex shallow coriaceous, sometimes very smooth or occasionally rougher behind ocelli, on lower parts of face becoming more elongate and shallower, cheeks almost smooth. Mandibles with three acute teeth, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep and dorsally convex, scutellum very convex. Dorsum of thorax with strong dark setae. Mesoscutum without notaular lines, about one-half broader than long, axillae touching, scutellum about as broad as long, propodeum medially relatively long, more than one-sixth as long as scutellum. Pronotum with fairly deep coriaceous sculpture, mesoscutum with coriaceous reticulate, reticulate-strigose, coriaceous-strigose or strigose sculpture, axillae dorsally with alutaceous sculpture, posterior margin steep and polished, scutellum anteriorly with numerous longitudinal ridges which run backwards from axillae, these sometimes short, but often about half length of scutellum, usually some sculpture between ridges which may extend nearly to apex but at least apex and usually apical one-third to half of scutellum very smooth and polished; mesopleuron more or less smooth but with some shallow, irregular sculpture anteriorly; propodeum usually with some sculpture in centre and along anterior margin from either side of middle third nearly to spiracles. Forewing hyaline, about two and a half times as long as broad; basal cell completely naked except for a few long setae in its apical half and a line below submarginal vein, speculum not interrupted and closed; submarginal vein with an apical hyaline break, marginal vein about three to four times as long as broad, about a half longer than stigmal which is slightly longer than postmarginal. Hindwing about four times as long as broad. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. Slightly shorter than thorax, cerci at about one-third, paratergites absent, ovipositor not visible in dry mounted material, hypopygium reaching apex of gaster and medially incised at apex. Ovipositor short, less than half as long as mid tibia, gonostylus about one-quarter as long as mid tibial spur.

♂. Differs from female as follows: antennae with pedicel distinctly shorter than first funicle segment, all funicle segments longer than broad, clava entire, funicle dorsally with two or three groups of very long setae about three to four times as long as diameter of corresponding segment, ventrally setae not much longer than diameter of segment; aedeagus about two-fifths as long as mid tibia and digitus with one apical spine.

Lirencyrtus primus sp. n.

(Figs 74, 177–181)

♀. Length: 1.22–1.44 mm (holotype 1.35 mm).

Colour. Frontovertex dark metallic green, purple along eye margins and below level of top of antennal toruli, scape testaceous, pedicel and flagellum brown; pronotum purplish brown, mesoscutum metallic green usually with purple reflections along posterior and anterior margins, sculptured area of scutellum purple, polished area green with some purple reflections, propodeum brown; foreleg, mid tarsus, mid tibial spur and hind coxae yellow to yellowish orange, mid coxae brown, mid femora in basal half, mid tibia in apical two-thirds, hind femora in basal third and hind tibia in apical half yellow to yellowish orange, remainder dark brown, but occasionally hind femora almost completely brown or mid femora, tibiae and hind tarsi almost completely yellow; gaster dark purplish brown with basal tergite metallic green with some purple reflections.

Head. Upper margin of antennal torulus about level with lowest margin of eye, vertex between posterior ocelli and occipital margin quite smooth and polished, malar sulcus absent, clava with apex more or less pointed. Relative measurements of head of holotype: head width 70, frontovertex width at median ocellus 25, malar space 14, eye length 43, eye width 34, POL 12, OOL 2.5, scape length 35, other proportions of antenna as in Fig. 177.

Thorax. Mesoscutum with coriaceous sculpture, of smaller mesh centrally, more transversely elongate laterally, scutellum with slightly more than apical half smooth and polished and with about seven to eleven strong ridges running backwards from axillae (Fig. 74) for a distance up to about half medial length of scutellum, propodeum with some very shallow sculpture in middle and along anterior margin either side of middle third almost to spiracles, anterior margin with a transverse shallow trough which extends almost to spiracle, the trough traversed by several carinae. Forewing (Fig. 178) with marginal vein variable in thickness, from three to four times as long as broad. Relative measurements of forewing of holotype: length 207, maximum width 83, length of submarginal vein 78, of marginal vein 13.5, of stigmal vein 10, of postmarginal vein 8.5; of hindwing: length 143, maximum width 37.

Gaster. Relative measurements of paratype: length of ovipositor 34, of gonostylus 5 [mid tibia 78, mid tibial spur 20]. Ovipositor as in Fig. 180.

♂. Length: 1.11–1.40 mm.

Similar to female except the frontovertex, which is very slightly broader, antennae (Fig. 179) and genitalia (Fig. 181).

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 9.vii.1943 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 1 ♀, Nova Teutonia, 8.viii.1935; 2 ♀, 2 ♂, Nova Teutonia, 18.v.1943; 3 ♀, 1 ♂, Nova Teutonia, vi.1943; 3 ♀, Nova Teutonia, vii.1943; 1 ♀, 1 ♂, Nova Teutonia, ix.1943; 1 ♀, Nova Teutonia, 10.x.1943; 1 ♂, Nova Teutonia, xi.1949; 1 ♀, Nova Teutonia, vi.1971 (*F. Plaumann*). (BMNH; CNC, Ottawa; MLP, Argentina; CIBC, Trinidad; UC, Riverside; PPRI, Pretoria; ZI, Leningrad).

COMMENTS. I have examined a further nine undescribed species from Brazil, Trinidad, Jamaica, Dominica and Panama (BMNH; CNC, Ottawa; USNM, Washington).

The genus appears to be close to *Helegonatopus* (tribe Chalcerini), but the female mainly differs in having a short ovipositor, very short gonostyli, anterior ridges on the scutellum and the hypopygium reaching the apex of the gaster. *Helegonatopus* has the ovipositor much longer than the mid tibia, the gonostyli about twice as long as the mid tibial spur, no anterior ridges on the scutellum, and the hypopygium reaching at most about two-thirds along the gaster.

LITOMASTIX Thomson

(Key couplets: ♀ 200, 218; ♂ 49, 51. Figs 96, 122)

Litomastix Thomson, 1876: 171. Type-species: *Encyrtus chalconotus* Dalman, by designation of Ashmead (1900: 363).

Pentacnemus Howard, 1892: 366. Type-species: *Pentacnemus bucculatricis* Howard, by monotypy.
Berecynthus Howard, 1898b: 237. Type-species: *Berecynthus bakeri* Howard, by monotypy.
Paracopidosomopsis Girault, 1916d: 49. Type-species: *Berecynthus floridanus* Ashmead, by monotypy.
Litomastiellus Mercet, 1921: 443. Type-species: *Litomastix claviger* Mercet, by designation of Peck in Muesebeck *et al.* (1951: 481).
Limastotix Mercet, 1921: 443. Type-species: *Litomastix hispanicus* Mercet, by monotypy.
Berecynthiscus Ghesquière, 1946: 368. [Unnecessary replacement name for *Berecynthus* Howard.]

INCLUDED SPECIES. Thirty-six, three of which are found in the Neotropics: *calypso* (Crawford, 1914: 88) (**comb. n.** from *Holcencyrtus*), *floridana* Ashmead, 1900: 365, *truncatella* (Dalman) (= *aestivalis* Mercet, 1921: 447); also a further two undescribed species from Ecuador and Trinidad (BMNH; CNC, Ottawa).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Polyembryonic parasites of larvae of Lepidoptera.

COMMENTS. It is very likely that *calypso* and *floridana* are the same species as *truncatella*. The two undetermined species from Trinidad and Ecuador are very distinct from this species and belong to the *thebe*-group.

Placed in the tribe Copidosomatini, subtribe Copidosomatina. See comments under *Copidosoma*.

***LOCHITOENCYRTUS* De Santis** (Key couplets: ♀ 184; ♂ 25. Fig. 86)

Lochitoencyrtus De Santis, 1964: 264. Type-species: *Lochitoencyrtus gahani* De Santis, by monotypy.

INCLUDED SPECIES. One: *gahani* De Santis, 1964: 265.

DISTRIBUTION. Argentina, Brazil, Trinidad.

BIOLOGY. Unknown.

COMMENTS. Placed in the tribe Trechnitini by Trjapitzin (1973b); this is very probably wrong.

The genus is similar in appearance to *Aminellus* Masi (tribe Bothriothoracini, subtribe Aminellina) but differs in the head being relatively more deep (i.e. less lenticular), the stigmal vein straight, the punctures on the head shiny bottomed and the mesoscutum and scutellum lacking deep piliferous punctures. Even though it superficially resembles *Aminellus* I do not think that the genus belongs in the tribe Bothriothoracini. I am unable to satisfactorily place it according to Trjapitzin's classification of the Encyrtidae.

***LOHIELLA* gen. n.** (Key couplet: ♀ 165. Figs 182, 183)

Type-species: *Encyrtus flaviclavus* Howard in Riley, Ashmead & Howard, 1894: 96.

♀. *Head*. Moderately deep inside view and more or less abruptly bent at level of top of antennal scrobes. Eye about one-third longer than broad, with numerous short hairs and reaching occipital margin which is sharp. Malar space about half as long as eye and with malar sulcus absent. Frontoververtex at narrowest point slightly less than one-quarter head width; ocelli forming a slightly obtuse angle, posterior ocellus separated from occipital margin by slightly less than its own diameter and from eye margin by less than half its own diameter. Antennal scrobes shallow but meeting dorsally, reaching about half way from antennal toruli to anterior ocellus, antennal torulus separated from mouth margin by about one and a half times its own length and from other torulus by about its own length, torulus high on head, its ventral margin only very slightly below ventral margin of eye. Antennal scape subcylindrical, pedicel conical and subequal in length to all six funicle segments which are all slightly longer than broad and cylindrical, clava three-segmented, about as wide as funicle and with apex rounded (Fig. 182); longitudinal sensilla on all flagellar segments. Sculpture on frontoververtex shallow, shagreened, more elongate between eyes and antennal scrobes, and on genae. Mandibles with two acute teeth and a truncation, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep, mesoscutum convex and scutellum almost flat. Mesoscutum without notaular lines and about a half broader than long, axillae slightly separated by posterior margin of mesoscutum, scutellum about as broad as long, propodeum medially about one-sixth as long as scutellum. Pronotum, mesoscutum and axillae with similar sculpture to frontovertex but slightly deeper, laterally and on axillae more transversely elongate, scutellum with deeper, raised, elongate sculpture more or less arranged in whorls which is similar in appearance to a fingerprint, apex and sides of scutellum entirely smooth, mid pleuron almost smooth but with raised elongate sculpture, propodeum medially with some shallow sculpture. Forewing (Fig. 183) hyaline and about two and a half times as long as broad; basal cell naked in its proximal half, speculum not interrupted and open; submarginal vein with apical hyaline break, marginal vein distinctly longer than broad, longer than radial which in turn is longer than postmarginal. Hindwing about three and a half times as long as broad. Mid tibial spur slightly longer than mid basal tarsal segment.

Gaster. Slightly shorter than thorax with cerci at about one-third, apex of hypopygium slightly more than half way along gaster, ovipositor only slightly exerted.

♂. Unknown.

INCLUDED SPECIES. One: *flaviclava* (Howard) (Noyes, 1979: 154).

DISTRIBUTION. St Vincent, Trinidad.

BIOLOGY. Unknown.

COMMENTS. The species previously undetermined by Noyes (1979: 154) is merely a form of *flaviclava*; the mandibles have two acute teeth and a truncation, not three acute teeth as stated.

This genus bears a superficial resemblance to some species of *Rhytidothorax*, but undoubtedly belongs to the tribe Microteriyini and very probably the subtribe Microteriyina.

MARIOLA gen. n.

(Key couplet: ♀ 75. Figs 42, 184, 185)

Type-species: *Mariola flava* sp. n.

♀. Body generally dorso-ventrally flattened (Fig. 42).

Head. Occipital foramen high on head at about four-fifths head length. Eye about two and a half to three times as long as broad, naked and very nearly reaching occipital margin which is sharp. Malar space about one-fifth length of eye, with malar sulcus absent. Frontovertex at narrowest point slightly less than half head width, inner eye margins slightly concave but almost parallel, ocelli more or less forming a right angle, posterior ocellus separated from occipital margin by slightly more than its own diameter and from eye margin by slightly more than twice its own diameter. Antennal scrobes absent, torulus very nearly touching mouth margin and separated from other torulus by about three times its own length. Antennal scape slightly expanded and flattened, pedicel conical, about half as long as funicle, funicle six-segmented, all segments transverse, the distal ones much longer and broader, clava three-segmented, broader than and about as long as funicle and with apex rounded. Frontovertex with shallow coriaceous sculpture. Mandibles narrow, with three acute teeth, the middle one slightly the longest.

Thorax. Pronotum not longitudinally divided in centre, mesoscutum without notaular lines, about a half broader than long, axillae meeting, scutellum only very slightly broader than long, with sides (in dorsal view) rounded and apex pointed, propodeum medially about one-seventh as long as scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, similar to that on frontovertex, scutellum more or less smooth and polished. Forewing more or less hyaline but slightly and irregularly infumate from about half way along submarginal vein to apex of postmarginal; wing about three times as long as broad; basal cell sparsely but almost entirely with setae, costal cell narrow, about as wide as submarginal vein, speculum interrupted by a few setae and closed; submarginal vein with an apical hyaline break, marginal vein slightly more than twice as long as broad, slightly shorter than stigmal and about twice as long as postmarginal. Hindwing slightly more than five times as long as broad. Mid tibial spur shorter than mid basal tarsal segment.

Gaster. About one-quarter longer than thorax, cerci about half way along but just in apical half, hypopygium nearly reaching apex of gaster, exerted part of ovipositor slightly longer than one-third of

gaster and with sheaths distinctly flattened, deepest at about middle of exerted part and gradually tapering towards apex.

♂. Unknown.

Named in honour of my wife.

Mariola flava sp. n.

(Figs 42, 184, 185)

♀. Length (excluding ovipositor) 0.99 mm.

Colour. Body completely yellowish orange except antenna which has scape and pedicel testaceous and flagellum brown, propodeum slightly infuscate, gaster with a small area just anterior of each cercus and sides near apex brown.

Head. Relative measurements of head: maximum width 45, frontovertex width at median ocellus 18, malar space 6, eye length 28, eye width approximately 10, POL 7, OOL 4.5, scape length 18, other proportions of antenna as in Fig. 185.

Thorax. Relative measurements of forewing (Fig. 184): length 115, maximum width 34, length of submarginal vein 50, marginal vein 5, stigmal vein 7, postmarginal vein 2.

Gaster. About one-quarter longer than thorax, cerci about half way along but just in apical half,

♂. Unknown.

DISTRIBUTION. St Vincent.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **St Vincent**: St George, Belmont, 6.vii.1976 (*J. S. Noyes*) (BMNH).

COMMENTS. Belongs to the tribe Microteryni, subtribe Platencyrtina and differs from the only included genus, *Platencyrtus* Ferrière, in having the ovipositor well exerted with sheaths flattened, relatively longer scutellum, narrower frontovertex and cerci more advanced on the gaster. *Platencyrtus* has the ovipositor hardly exerted with the sheaths cylindrical, scutellum triangular in shape and about one and three-quarter times as broad as long, frontovertex about two-thirds head width and cerci nearer apex of gaster at about four-fifths.

MERCETENCYRTUS Trjapitzin

(Key couplets: ♀ 175, 203, 258; ♂ 130, 133)

Mercetencyrtus Trjapitzin, 1963: 884. Type-species: *Encyrtus ambiguus* Nees, by monotypy.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *gracilicornis* (De Santis, 1964: 191) (**comb. n.** from *Syrphophagus*); also a further one (or two) undescribed species from Trinidad and Panama (BMNH; CNC, Ottawa).

DISTRIBUTION. Argentina, Brazil, Trinidad, Panama. World: cosmopolitan.

BIOLOGY. Unknown.

COMMENTS. The South American species are very close to *ambiguus* Nees but differ in the relative lengths of the funicle segments and coloration of the legs. The mandibles are also different in lacking, or apparently lacking the fourth (second lowest) tooth. However, one slide-mounted specimen from Trinidad appears to have a four-toothed right mandible and a three-toothed left mandible.

The species of *Mercetencyrtus* have a pit, or some similar structure, laterally on each side of the scutellum which is clearly visible in slide-mounted material. In *ambiguus* it is fairly small and situated close to the axillae whereas in *gracilicornis* it is relatively larger and nearly half way along the scutellum. It is possible that there are many other species present in other parts of the

world since those I have seen from Africa and Australia appear to represent unknown species.

The genus cannot be placed according to Trjapitzin's classification of the Encyrtidae.

MEROMYZOBIA Ashmead

(Key couplets: ♀ 12; ♂ 12)

Meromyzobia Ashmead, 1900: 349. Type-species: *Ericydnus maculipennis* Ashmead, by original designation.

INCLUDED SPECIES. Eight, two of which are found in the Neotropics: *flavipes* De Santis, 1972b: 52 and *gripha* De Santis, 1968: 152.

DISTRIBUTION. Argentina. World: Nearctic region.

BIOLOGY. Parasites of eggs of Orthoptera.

COMMENTS. Both of the South American species differ from other species of *Meromyzobia* in having only five funicle segments (one anelliform) instead of six (two anelliform). However, I think these species are well placed here.

Placed in the tribe Miraini, subtribe Mayridiina by Trjapitzin & Gordh (1978b).

METAPHYCUS Mercet

(Key couplets: ♀ 64, 77, 136, 194, 211, 232, 233; ♂ 55, 68. Fig. 129)

Metaphycus Mercet, 1917a: 138. Type-species: *Aphycus zebratus* Mercet, by monotypy.

Euaphycus Mercet, 1921: 197. Type-species: *Encyrtus hederaceus* sensu Mercet nec Westwood (see Graham 1969: 224–225), designated by Mercet (1925: 23).

Mercetiella Dozier, 1926: 98. Type-species: *Mercetiella reticulata* Dozier, by monotypy.

Melanphycus Compere, 1947: 5. Type-species: *Pseudococcobius fumipennis* Timberlake, by original designation.

Notoencyrtus De Santis, 1964: 211. Type-species: *Notoencyrtus guttofasciatus* De Santis, by monotypy.

Syn. n.

INCLUDED SPECIES. One hundred and twelve, 22 of which are found in the Neotropics: *alboclavatus* Compere, 1939: 63, *amoenus* (Howard; Noyes, 1979: 160), *angustifrons* Compere, 1957: 227, *brasiliensis* Compere & Annecke, 1961: 36, *ceroplastae* (Dozier, 1936: 185) (**comb. n.** from *Coccidoctonus*), *discolor* (De Santis, 1970: 13) (**comb. n.** from *Aphycus*), *eruptor* (Howard; Timberlake, 1916: 628), *flavus* (Howard; Mercet, 1921: 209), *guttofasciatus* (De Santis, 1964: 212) (**comb. n.** from *Notoencyrtus*), *helvolus* (Compere, 1926: 25), *lounsburyi* (Howard, 1898b: 244), *luteolus* (Timberlake, 1916: 636), *maculipes* (Howard; Timberlake, 1916: 621) (**comb. n.** from *Aphycus*), *mexicanus* (Howard; Timberlake, 1916: 627), *monticolens* Dozier, 1937: 124, *niger* (Brèthes; De Santis, 1964: 143) (**comb. n.** from *Aphycus*), *oaxacae* (Howard, 1898b: 246) (**comb. n.** from *Aphycus*), *ogloblini* (De Santis, 1972b: 48) (**comb. n.** from *Dicarnosis*), *portoricensis* (Dozier, 1926: 100) (**comb. n.** from *Euaphycus*), *reticulatus* (Dozier, 1926: 98), *rusti* (Timberlake, 1916: 617) (**comb. n.** from *Aphycus*), *stanleyi* Compere, 1940: 20; also many undetermined species from Brazil, Colombia, Panama and Trinidad (BMNH; CNC, Ottawa).

REFERENCES. Timberlake (1916: 587–639); Annecke & Mynhardt (1971; 1972).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Coccidae, Diaspididae, Lacciferidae and Eriococcidae (Homoptera).

COMMENTS. I have examined a paratype of *Notoencyrtus guttofasciatus*. It is a male *Metaphycus* (not female as stated by De Santis).

The species described by Dozier as *Coccidoctonus ceroplastae* is very probably misplaced in *Metaphycus* and may even belong to the tribe Microterytini. However, I feel that it is best placed here until its taxonomic position can be better determined.

Two of the South American species of *Metaphycus* are unusual (including *discolor*) in that the ovipositor is well exerted, the exerted part being about as long as the gaster.

Placed in the tribe Aphycini, subtribe Paraphycina.

MICROTERTYS Thomson

(Key couplets: ♀ 65, 126; ♂ 66, 83, 105, 117. Fig. 133)

Microterys Thomson, 1876: 155. Type-species: *Encyrtus sylvius* Dalman, by designation of Ashmead (1900: 390).

Sceptrophorus Förster, 1856: 34. Type-species: *Encyrtus scepstriger* Förster, by monotypy. [Suppressed in favour of *Microterys* Thomson: Opinion 1110, 1978, *Opin. Decl. int. Commn. zool. Nom.* 35: 99–100.]
Apentelicus Fullaway, 1913: 26. Type-species: *Apentelicus kotinskyi* Fullaway, by monotypy.

INCLUDED SPECIES. One hundred and twenty-five, four of which are found in the Neotropics: *elegans* Blanchard (De Santis, 1964: 183), *flavus* (Howard) (= *frontatus* Mercet, 1921: 413), *kotinskyi* (Fullaway, 1913: 26), *tricoloricornis* (Destefani) (= *consobrinus* Mercet, 1921: 417, 709); also one undetermined species from Brazil (BMNH).

REFERENCE. Rosen (1976).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Coccidae, Aclerdidae, Eriococcidae, Kermesidae, Kerridae, Lecaniodiaspididae and Pseudococcidae (Homoptera).

COMMENTS. I have examined the syntypes of *elegans*; they are very probably the same as *flavus*, differing only in the extent of the infuscation of the forewing.

Placed in the tribe Microterysiini, subtribe Microterysiina.

MOORELLA Cameron

(Key couplet: ♀ 90. Fig. 45)

Moorella Cameron, 1913: 124. Type-species: *Moorella fulviceps* Cameron, by monotypy.

Chrysopophilus Timberlake, 1925: 178. Type-species: *Chrysopophilus compressiventris* Timberlake, by monotypy. **Syn. n.**

INCLUDED SPECIES. Two: *compressiventris* (Timberlake, 1925: 179) (**comb. n.**) and *fulviceps* Cameron, 1913: 125; also probably a further undetermined species from Panama.

DISTRIBUTION. Guyana, Panama.

BIOLOGY. Parasites of larvae of Chrysopidae (Neuroptera).

COMMENTS. I have examined a paratype of *Chrysopophilus compressiventris*; it is congeneric with *M. fulviceps* but is a distinct species.

The genus belongs to the tribe Homalotylini, subtribe Homalotyliina.

MUCRENCYRTUS gen. n.

(Key couplets: ♀ 39, 117, 174, 193; ♂ 76. Figs 80, 84, 90, 186–189)

Type-species: *Mucencyrtus insulanus* sp. n.

♀. *Head*. In profile, deep and most rounded level with top of antennal scrobes. Eye about one-quarter longer than broad, naked and reaching occipital margin which is rounded. Malar space less than half length of eye with malar sulcus weakly indicated. Frontovertex at narrowest point about two-fifths head width, ocelli small and more or less forming a right angle, posterior ocellus about two to four times its own diameter from occipital margin and less than its own diameter from eye margin. Antennal scrobes deep with outer margins, at extreme uppermost point, sharply margined, interantennal prominence, in outline like an inverted Y with edge sharp above antennal toruli and produced as a long, narrow, sharp ridge which nearly reaches frontovertex; antennal torulus separated from mouth margin by slightly less than its own length and from other torulus by slightly more than its own length, its dorsal margin slightly above level of lowest eye margin. Antennal scape subcylindrical or very slightly flattened, pedicel conical, longer than first funicle segment, funicle six-segmented, cylindrical and widening very slightly distally, clava three-segmented, with apex rounded and about half as long as funicle; longitudinal sensilla on all flagellar segments. Frontovertex with shallow reticulate to punctiform reticulate sculpture which becomes slightly elongate and sometimes shallow coriaceous on lower parts of face and genae. Mandibles with three teeth, upper tooth slightly rounded, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep, mesoscutum and scutellum flat. Mesoscutum about two to two and a half times as broad as long, without notaular lines or with notaular lines vaguely indicated anteriorly, axillae meeting, scutellum about as broad as long, very flat with apex pointed and produced as a very narrow translucent flange which overhangs the propodeum, propodeum medially longer than one-sixth length of scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, sometimes almost smooth; scutellum with distinctly deeper coriaceous, almost reticulate, sculpture of smaller mesh; metanotum and propodeum with reticulate sculpture, area either side of median area of propodeum transversely strigose almost to spiracles, propodeum sometimes smooth medially; mesopleuron with shallow, slightly elongate, reticulate sculpture. Forewing hyaline or with a central fuscous spot, basal cell and costal cell (sometimes less so) densely hairy, speculum occasionally interrupted but always closed, submarginal vein without apical hyaline break, marginal vein not reaching anterior margin of wing, at most as long as broad, apical cilia absent or very short. Macropterous forms: forewing about two and a half times as long as broad, marginal vein about one-quarter to half as long as stigmal, postmarginal very short, almost absent; hindwing about two and a half times as long as broad. Micropterous forms: forewing slightly more than twice as long as broad with apex truncate, marginal vein only slightly shorter than stigmal; hindwing about two and a half times as long as broad with apex obliquely truncate. Mid tibial spur very slightly shorter than corresponding basitarsus.

Gaster. About as long as thorax, dorsally flat, ventrally very convex, cerci at about one-third, paratergites absent, hypopygium with a long, thin apical extension which reaches apex of gaster (as in Fig. 84), not notched apically. Ovipositor about as long as mid tibia, gonostyli apparently absent.

♂. Essentially similar to female except no micropterous forms known; antennae (as in Fig. 188), setae in basal cell of forewing less dense, last gastral sternite of normal shape.

Mucencyrtus insulanus sp. n.

(Figs 80, 84, 90, 186–189)

♀. Length: 1.27–1.43 mm (holotype 1.35 mm).

Colour. Body completely orange, metanotum, propodeum and extreme of gaster slightly mixed fuscous, forewing hyaline.

Head. Posterior ocellus about two and a half times its own diameter from occipital margin; frontovertex with shallow, punctiform-reticulate sculpture which becomes more irregular on lower parts of face and cheeks. Relative measurements of head of holotype: head width 91, frontovertex width at median ocellus 36, malar space 23, eye length 55, eye width 43, POL 26, OOL 3, scape length 34, other proportions of antenna as in Fig. 189. Head in frontal aspect as in Fig. 80.

Thorax. Mesoscutum and scutellum with numerous translucent setae which appear white in some light. Propodeum with dense reticulate sculpture, anteriorly from either side of middle nearly to spiracles almost transversely striate. Macropterous form: forewing at extreme apex and along anterior margin without marginal cilia, basal cell with setae nearly as dense as, but markedly stronger than, those in centre of wing, costal cell with setae as dense as basal cell, speculum not interrupted; relative measurements of forewing of holotype: length 172, maximum width 68, length of submarginal vein 74, of marginal vein 5, of stigmal vein 11, of postmarginal vein 0.5; of hindwing: length 112, maximum width 31. Micropterous form: setae of forewing similar to macropterous form, wing margin without setae, apex of wing very slightly obliquely truncate; relative measurements of forewing of paratype: length 75, maximum width 31, length of submarginal vein 52, of marginal vein 3, of stigmal vein 5.5, of postmarginal vein 0.5; of hindwing: length 40, maximum width 12, apex distinctly obliquely truncate.

Gaster. In side view as in Fig. 84. Relative measurements of paratype: length of ovipositor 59 [mid tibia 65]. Ovipositor as in Fig. 187.

♂. Length: 1.08–1.20 mm.

Essentially similar to female except the following: lower parts of face whitish, occiput, pronotum, propodeum and metanotum marked with dark brown, centre of thorax yellowish white, dorsum of gaster brownish; ocelli forming a distinctly obtuse angle; forewing (Fig. 90) with setae in basal and costal cells not quite as dense. Male genitalia (Fig. 186): each digitus with two apical spines. Relative measurements of paratype: head width 75, frontovertex width at median ocellus 35, malar space 20, eye length 40, POL 24, OOL 3, scape length, proportions of antenna as in Fig. 188.

DISTRIBUTION. Trinidad, St Vincent.

BIOLOGY. Reared from *Aclerda* sp. (Homoptera: Acleridae).

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, St Augustine, x.1976 (*F. D. Bennett*) (BMNH).

Paratypes. **Trinidad**: 2 ♀, Orange Grove, i.1973, ex *Aclerda* sp. on sugarcane (*F. D. Bennett*); 1 ♀, Curepe, Santa Margarita Circular Road, 15–28.i.1974 (*F. D. Bennett*); 2 ♀, 2 ♂, St Augustine, 21.vi.1976 (*J. S. Noyes*); 1 ♂, St Vincent, St George, Argyle, 8.vii.1976 (*J. S. Noyes*). (BMNH; CIBC, Trinidad; CNC, Ottawa.)

COMMENTS. Two further species examined: *Mucencyrtus aclerdae* (De Santis) (**comb. n.** from *Aenasioidea*) and an undetermined species from Ecuador (CNC, Ottawa). *M. aclerdae* has a large infusate spot in the centre of the forewings and the setae in the costal cell less dense than in the type-species.

Very close to *Allencyrtus* Annecke & Mynhardt (tribe Microteryni, subtribe Microteryna) which differs in having a metallic body (greenish blue), hypopygium barely extended apically and deeply notched, propodeum rather smooth, mandibles with upper tooth rudimentary and forewings more or less generally suffused greyish.

NEAPSILOPHRYS gen. n.

(Key couplet: ♀ 150. Figs 68, 190–191)

Type-species: *Neapsilophrys flavipes* sp. n.

♀. *Head*. In side view, moderately deep and most rounded level with top of antennal scrobes, frontovertex slightly convex. Eye about one-third longer than broad, naked and reaching occipital margin. Malar space slightly longer than half length of eye with malar sulcus absent. Frontovertex at narrowest point, slightly less than half head width, ocelli forming a slightly obtuse angle, posterior ocellus separated from occipital and eye margins by less than its own diameter. Antennal scrobes shallow, separated dorsally by continuation of interantennal prominence, and reaching about half way from antennal toruli to anterior ocellus; antennal torulus separated from mouth margin and other torulus by about its own length. Scape subcylindrical, pedicel conical and about same length as first funicle segment, all six funicle segments longer than broad and cylindrical, clava three-segmented, apically rounded and about as wide as funicle; longitudinal sensilla on all flagellar segments. Frontovertex with irregular reticulate sculpture which is much shallower on lower parts of face so that genae and areas below eyes are almost completely smooth. Mandibles tridentate with upper tooth rounded or blunt, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep and dorsally convex. Mesoscutum without notaular lines, about a half broader than long, axillae almost meeting, scutellum distinctly longer than broad and with apex rounded and slightly produced as a flange, propodeum medially about one-seventh as long as scutellum. Pronotum with coriaceous sculpture, mesoscutum with raised reticulate sculpture medially but laterally with strigose sculpture, scutellum with fine strigose sculpture except extreme apex which is polished, mesopleuron with strigose sculpture which posteriorly becomes more reticulate, propodeum smooth. Forewing hyaline, about two and a half times as long as broad, basal cell hairy except for proximal one-third which is hyaline, speculum open but interrupted by two or three lines of setae; submarginal vein with an apical hyaline break, marginal vein more than twice as long as broad and about as long as stigmal, postmarginal vein nearly twice as long as stigmal. Mid tibial spur slightly shorter than mid basal tarsal segment.

Gaster. Slightly longer than thorax and apically compressed from side to side. Cerci at about one-third, paratergites absent, hypopygium very nearly reaching apex of gaster, exerted part of ovipositor slightly longer than half length of gaster. Ovipositor one and a half times as long as gaster or about two and a half times as long as mid tibia, gonostylus about as long as mid tibia.

♂. Unknown.

Neapsilophrys flavipes sp. n.

(Figs 68, 190, 191)

♀. Length (excluding ovipositor): 1.75–1.96 mm (holotype 1.81 mm).

Colour. Frontoververtex and dorsum of thorax metallic green, pronotum and scutellum strongly tinged purple, antenna with scape and pedicel yellow to yellowish brown, flagellum brown, lower parts of face, genae, temples and mesopleura purple, legs yellow except mid and hind coxae which are brown, base of gaster yellow, propodeum and remainder of gaster, including ovipositor sheaths, brown.

Head. Relative measurements of head of holotype: head width 76.5, frontoververtex width at median ocellus 34, malar space 28, eye length 45, eye width 34, POL 17, OOL 3, length of scape 49, proportions of antenna as in Fig. 191.

Thorax. Relative measurements of forewing of holotype: length 228, maximum width 89, length of submarginal vein 87, of marginal vein 15, of stigmal vein 14.5, of postmarginal vein 27; of hindwing: length 148, maximum width 42. Base of forewing Fig. 68.

Gaster. Relative length of paratype: length of ovipositor 238, of gonostylus 104 [mid tibia 96]. Genitalia as in Fig. 190.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 14.xi.1944 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 1 ♀, Nova Teutonia, 14.xi.1944; 4 ♀, Nova Teutonia 16.xi.1944; 8 ♀, Nova Teutonia, 30.iii.1945; 2 ♀, Nova Teutonia, 27.iv.1945 (*F. Plaumann*). (BMNH; USNM, Washington; CIBC, Trinidad; CNC, Ottawa; MLP, Argentina; PPRI, Pretoria; ZI, Leningrad.)

COMMENTS. The genus belongs to the tribe Copidosomatini, subtribe Ageniaspidina. It can be separated from other members of the subtribe found in South America using the characters given in the key. In many ways the genus is intermediate between this subtribe and the Copidosomatina, the venation and arrangement of the setae at the base of the forewing being typical of the former but the body is generally typical of the latter.

Also superficially similar to *Deloencyrtus* but differs in having the gaster apically bilaterally flattened, the eyes naked, the scutellum convex and the hypopygium without a strong apical median incision, whereas *Deloencyrtus* has the gaster dorso-ventrally flattened, the eyes distinctly hairy, the scutellum flat and the apex of the hypopygium with a strong apical median incision.

NEOCOCCIDENCYRTUS Compere

(Key couplets: ♀ 102, 118, 245; ♂ 142. Figs 52, 103)

Neococcidencyrtus Compere, 1928: 209. Type-species: *Neococcidencyrtus alula* Compere, by monotypy. *Xencomys* Blanchard, 1940: 106. Type-species: *Xencomys chrysomphali* Blanchard, by monotypy.

INCLUDED SPECIES. Five, two of which are found in the Neotropics: *chrysomphali* (Blanchard; De Santis, 1964: 188), *crouzelae* De Santis, 1964: 233; also two undetermined species from Brazil and Trinidad (BMNH).

REFERENCE. Key to world species: Myartseva (1977b: 175).

DISTRIBUTION. Argentina, Brazil, Trinidad. World: Nearctic, Palaearctic and Ethiopian regions.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. Very probably a member of the tribe Habrolepidini.

NEODUSMETIA Kerrich

(Key couplets: ♀ 37; ♂ 45. Fig. 18)

Neodusmetia Kerrich, 1964: 76. Type-species: *Dusmetia sangwani* Subba Rao, by monotypy.

INCLUDED SPECIES. One: *sangwani* (Subba Rao, 1957: 385).

DISTRIBUTION. Mexico, Brazil. World: Nearctic, Ethiopian and Oriental regions.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Dinocarsini by Gordh & Trjapitzin (1978b).

OOENCYRTUS Ashmead

(Key couplets: ♀ 39, 82, 171, 199, 247, 255; ♂ 81, 114, 122. Figs 76, 77)

Ooencyrtus Ashmead, 1900: 381. Type-species: *Encyrtus clisiocampe* Ashmead, by original designation.

Schedius Howard, 1910: 2. Type-species: *Schedius kuwanae* Howard, by monotypy.

Pseudolitomastix Risbec, 1954: 1068. Type-species: *Litomastix creona* Risbec, by monotypy.

INCLUDED SPECIES. Seventy-eight, six of which are found in the Neotropics: *chrysopae* Crawford, 1913b: 347, *johnsoni* (Howard, 1898a: 18), *latiscapus* Gahan, 1927: 15, *premidis* Gahan, 1943: 137, *submetallicus* (Howard; Noyes, 1979: 160) and *trinidadensis* Crawford, 1913b: 347; also five or six undetermined species from Trinidad and Brazil (BMNH; CNC, Ottawa).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of eggs of various insects, notably Lepidoptera and Heteroptera.

COMMENTS. *Ooencyrtus trinidadensis venatorius* De Santis & Sarmiento (in De Santis *et al.*, 1976: 7–9) may be a distinct species (De Santis, pers. comm.).

I have selected and labelled LECTOTYPE females from the syntype-series of each of *O. chrysopae* Crawford (labelled: 'Verdantvale, Arima, Trinidad, eggs Chrysopa 51–1 sp., F. W. Urich Collector, U.S.N.M. Type No. 16040') and *O. trinidadensis* Crawford (labelled 'reared from eggs of Pentatomid, Port of Spain, Trinidad, BWI, Feb. 1912, F. W. Urich Collector, Type No. 16039 U.S.N.M.') (USNM, Washington).

Placed in the tribe Microteryni, subtribe Ooencyrtina. See Comments under *Echthrodryinus*.

PAPAKA gen. n.

(Key couplets: ♀ 246; ♂ 55. Figs 102, 192–196)

Type-species: *Papaka confusor* sp. n.

♀. *Head*. In side view moderately deep and quite triangular, frontovertex moderately convex. Eye about one-third longer than broad, naked and over-reaching occipital margin which is rounded. Clypeal margin broadly emarginate. Malar space nearly two-thirds eye length and with malar sulcus absent. Frontovertex about one-quarter head width; ocelli forming an acute angle of about 60°, posterior ocellus separated from occipital margin by about twice its diameter and nearly touching eye margin. Antennal scrobes shallow, meeting dorsally and reaching slightly further than half way from antennal toruli to anterior ocellus; antennal torulus separated from mouth margin by less than its own length and from other torulus by about one and a half times its own length, its dorsal margin well below ventral margin of eye. Antennal scape slightly expanded and flattened in its basal half, pedicel conical and longer than the first two funicle segments together, funicle six-segmented and cylindrical, the first two segments transverse or quadrate, the remainder longer than broad and hardly broadening distally, clava hardly wider than funicle, three-segmented with apex pointed and about half length of funicle; longitudinal sensilla on all flagellar segments except proximal three. Frontovertex with irregular coriaceous sculpture, more elongate on interantennal prominence and cheeks. Mandibles with two acute teeth and a rudimentary third (upper) tooth (Fig. 102), maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view, moderately deep with mesoscutum and scutellum flat. Mesoscutum without notaular lines, about one-third broader than long, axillae more or less meeting, scutellum slightly broader than long, very flat and with apex acute, propodeum medially about one-fifteenth as long as scutellum. Pronotum and mesoscutum slightly shiny with fairly regular shallow reticulate sculpture, more elongate towards side of mesoscutum, axillae with deep coriaceous sculpture, scutellum matt, with more or less regular punctate sculpture, propodeum almost smooth, mesopleuron almost smooth but with some very

shallow, reticulate sculpture. Forewing hyaline, about two and a half times as long as broad; basal cell completely hairy, speculum interrupted by two or three lines of setae and closed; submarginal vein slightly expanded apically and with an apical hyaline break, marginal vein about twice as long as broad, less than half as long as stigmal and about twice as long as postmarginal. Hindwing about four and a half times as long as broad. Mid tibial spur slightly shorter than mid basal tarsal segment.

Gaster. Slightly shorter than thorax, cerci at about one-third, paratergites absent, apex of hypopygium reaching about three-quarters along gaster, ovipositor slightly exerted. Ovipositor about as long as gaster or one and a half times length of mid tibia, gonostylus about as long as mid tibial spur.

♂. Essentially similar to female except frontovertex about one-third head width, antennae with setae longer and clava entire; genitalia: digitus with two apical spines and aedeagus about two-thirds as long as mid tibia.

Papaka confusor sp. n.

(Figs 102, 192–196)

♀. Length: 0.86–1.17 mm (holotype 1.01 mm).

Colour. Body generally black or very dark brown, frontovertex and mesoscutum with some obscure green or brassy reflections; antenna with scape and pedicel dark brown, both yellowish white apically, first five funicle segments and clava brown, sixth funicle segment yellow; legs with coxae brown, femora brown but basally and apically yellow, tibiae and tarsi yellow, the fore tibia with a broad dark brown median band, mid and hind tibiae each with two dark brown bands, ovipositor sheaths yellow.

Head. Relative measurements of holotype: head width 55, frontovertex width at median ocellus 14, malar space 23, eye length 37, eye width 30, POL 5.5, OOL 1.5, scape length 26, proportions of antenna as in Fig. 192.

Thorax. Relative measurements of forewing of holotype: length 152, maximum width 64, length of submarginal vein 60, of marginal vein 5.5, of stigmal vein 12, of postmarginal vein 3; of hindwing: length 100, maximum width 23. Base of forewing as in Fig. 194.

Gaster. Exserted part of ovipositor equal to about one-eighth length of gaster or one-sixth mid tibia. Relative measurements of paratype: length of ovipositor 73, of gonostylus 14 [mid tibia 45, mid tibial spur 13]. Ovipositor as in Fig. 193.

♂. Length: 0.68–0.73 mm.

Antenna as in Fig. 196, genitalia as in Fig. 195. Otherwise similar to female.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 14.x.1949 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 2 ♀, 2 ♂, Nova Teutonia, ix.1943; 1 ♀, Nova Teutonia, 31.viii.1949; 6 ♀, 1 ♂, Nova Teutonia, x.1949 (*F. Plaumann*). (BMNH; MLP, Argentina; UC, Riverside; ZI, Leningrad; PPRI, Pretoria.)

COMMENTS. One further undescribed species from Brazil (BMNH) which differs from the type-species in the relative lengths of the funicle segments, the sixth funicle segment concolorous with rest of the funicle and the exserted part of the ovipositor relatively longer.

The genus is superficially very similar to some species of *Neococcidencyrtus* and *Coccidencyrtus* but the forewing venation suggests that it is very probably more closely related to *Cicoencyrtus* and *Archinus* (Tribe Aphycini). It differs from both in having the upper tooth of the mandibles rudimentary, and in the sculpture of the mesoscutum, the relatively longer funicle segments and more densely hairy basal cell.

PARABLASTOTHRIX Mercet

(Key couplets: ♀ 91; ♂ 5. Fig 48)

Parablastothrix Mercet, 1917c: 538. Type-species: *Parablastothrix vespertina* Mercet, by monotypy.

INCLUDED SPECIES. Seven, one of which is found in the Neotropics: *chilensis* (Brèthes, 1919: 165) (**comb. n.** from *Archinus*), also three undetermined species from Brazil, Trinidad and St Vincent (BMNH).

REFERENCE. Key to world species: Trjapitzin (1971: 36).

DISTRIBUTION. Chile, Brazil, Trinidad, St Vincent. World: cosmopolitan.

BIOLOGY. Parasites of larvae of Lyonetiidae and Nepticulidae (Lepidoptera).

COMMENTS. I have not seen the type of *Archinus chilensis* but, from the description, it is very probably a species of *Parablastothrix*.

Placed in the tribe Copidosomatini, subtribe Pentacnemina. The genus is very close to *Calometopia* Mercet, but differs in the female only in having a slightly narrower clava with a shorter truncation, and in the male in having one segment less with a ramus. It is quite possible that the two genera will eventually be synonymized.

PARALEUROCERUS Girault

(Key couplets: ♀ 219; ♂ 34)

Paraleurocerus Girault, 1915c: 172. Type-species: *Paraleurocerus bicoloripes* Girault, by monotypy. *Gibberella* Miller, 1961: 496. Type-species: *Gibberella scutellata* Miller, by monotypy.

INCLUDED SPECIES. Three, one of which is found in the Neotropics: *reticulatus* (De Santis, 1964: 310) (**comb. n.** from *Ageniaspis*).

DISTRIBUTION. Argentina, Brazil. World: Nearctic region.

BIOLOGY. Polyembryonic parasites of larvae of Gracillariidae (Lepidoptera).

COMMENTS. I have examined a paratype of *Ageniaspis reticulatus*; it is clearly best placed in *Paraleurocerus*, although it is very probable that with further study the two genera will be considered synonymous.

Placed in the tribe Copidosomatini, subtribe Ageniaspidina.

PARALITOMASTIX Mercet

(Key couplets: ♀ 248; ♂ 77)

Paralitomastix Mercet, 1921: 438. Type-species: *Encyrtus varicornis* Nees, by monotypy.

INCLUDED SPECIES. Fifteen species, one of which is found in the Neotropics: *teciae* Blanchard (De Santis 1964: 290), and one undetermined species near *varicornis* (Nees) from Brazil (BMNH).

DISTRIBUTION. Chile, Argentina, Brazil. World: cosmopolitan.

BIOLOGY. Polyembryonic parasites of larvae of Pyralidae and Gelechiidae (Lepidoptera).

COMMENTS. Placed in the tribe Copidosomatini, subtribe Copidosomatina.

PARAMUCRONA gen. n.

(Key couplet: ♀ 174. Figs 85, 197, 198)

Type-species: *Paramucrona brasiliensis* sp. n.

♀. *Head*. In profile, moderately deep and most rounded level with top of antennal scrobes, frontovertex slightly convex. Eye distinctly bulging, slightly longer than broad, naked and not quite reaching occipital margin which is rounded except near middle where it is more or less sharp. Malar space slightly longer than half length of eye and with malar sulcus present, but weak. Frontovertex at narrowest point nearly half head width, ocelli forming an obtuse angle, posterior ocellus separated from occipital margin and eye margin by about its own diameter. Antennal scrobes quite shallow and not well delimited, reaching slightly more than half way between toruli and anterior ocellus; interantennal prominence relatively protuberant and rounded, reaching slightly further than dorsal margins of toruli and with a single, slightly curved line of

about seven very conspicuous long, erect setae about half way between toruli and mouth margin; antennal torulus separated from mouth margin by about its own length and from other torulus by slightly more than its length. Antennal scape slightly to distinctly flattened and expanded in middle, pedicel shorter than first funicle segment, funicle six-segmented, all funicle segments longer than broad and cylindrical, clava three-segmented, about as long as fifth and sixth funicle segments together and with apex more or less rounded; longitudinal sensilla on all flagellar segments but relatively short, mostly only two to three times as long as broad, sometimes hardly longer than broad. Frontovortex with scattered inconspicuous pale setae, sculpture very shallow coriaceous becoming more longitudinally elongate on lower parts of face, except on interantennal prominence. Mandibles with three teeth, the lowest acute and the upper two slightly rounded, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In profile moderately deep, mesoscutum and scutellum fairly flat. Mesoscutum with notaular lines weakly indicated anteriorly, otherwise absent, axillae meeting, scutellum slightly longer than broad, slightly shorter than mesoscutum, with apex pointed and produced as a short flange, propodeum medially less than one-seventh as long as scutellum. Dorsum of thorax with very shallow coriaceous sculpture, propodeum medially with one or two shallow incomplete carinae, mesopleuron smooth. Forewing hyaline, about two and a half times as long as broad, with short cilia along apical and costal margins; basal cell sparsely hairy with a bare triangle in proximal half, costal cell with one or two lines of setae dorsally which extend for about three-quarters its length to apex, speculum not interrupted and open; submarginal vein without apical hyaline break, marginal vein absent, stigmal vein arising directly from submarginal, postmarginal vein present but very short. Hindwing almost three and a half times as long as broad. Mid tibial spur slightly shorter than mid basal tarsal segment.

Gaster. Much shorter than, to nearly as long as, thorax, cerci at about one-third, ovipositor hidden or very slightly exerted, hypopygium with short apical triangular mucro (as in Fig. 84), which is at most slightly longer than mid tibial spur, but reaches apex of gaster. Ovipositor slightly shorter than mid tibia, gonostylus slightly less than half as long as mid tibial spur.

♂. Unknown.

Paramucrona brasiliensis sp. n.

(Figs 85, 197, 198)

♀. Length: 1.89–2.00 mm (holotype 1.92 mm).

Colour. Body orange except posterior three-quarters of mesopleuron which is brown, and metanotum and dorsum of gaster which are slightly infusate.

Head. Ocelli forming an angle of about 105–110°, occipital margin not sharp, only slightly acute medially. Relative measurements of holotype: head width 99, frontovortex width at median ocellus 45, malar space 29, eye length 52, eye width 44, POL 18, OOL 8, scape length 45, proportions of antennae as in Fig. 197. Longitudinal sensilla on flagellum at least twice as long as broad, some on clava five times as long as broad.

Thorax. Relative measurements of forewing of holotype: length 300, maximum width 121, length of submarginal vein 120, of stigmal vein 20, of postmarginal vein 4; of hindwing: length 176, maximum width 50. Base of forewing as in Fig. 85.

Gaster. Only slightly shorter than thorax. Relative measurements of paratype: length of ovipositor 90, of gonostylus 13 [mid tibia 112, mid tibial spur 28]; apical extension of hypopygium about as long as mid tibial spur.

♂. Unknown.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 31.x.1949 (*F. Plaumann*) (BMNH).

Paratypes. **Brazil**: 2 ♀, Nova Teutonia, 30.x.1949 (*F. Plaumann*) (BMNH).

COMMENTS. Two further undescribed species from Brazil (BMNH; CNC, Ottawa) differ in relative lengths of ovipositor, gonostylus, apical extension of hypopygium, coloration, proportions of antennal segments and sharpness of occipital margin.

Belongs to the same group as *Bennettisca*, *Mucencyrtus* and *Allencyrtus* Annecke & Mynhardt (tribe Microteriyini, subtribe Microteriyina), but differs from the first two by characters given in the key and from *Allencyrtus* in lacking the marginal vein, and in the pilosity of the base of the forewing, colour of body, structure of antennae, presence of costal cilia and lack of carinate extension of interantennal prominence. *Allencyrtus* has a dark, metallic body, densely pilose basal and costal cells, marginal vein present (although not reaching anterior margin of forewing), relatively short clava, costal cilia lacking and carinate extension of interantennal prominence (as in *Mucencyrtus*).

PARECHTHRODRYINUS Girault

(Key couplets: ♀ 116, 127, 161, 192, 238; ♂ 116, 125. Figs 57, 138)

Parechthrodryinus Girault, 1916c: 480. Type-species: *Parechthrodryinus convexus* Girault, by monotypy. *Tyndarichoides* Mercet, 1921: 649. Type-species: *Tyndarichoides metallicus* Mercet, by monotypy.

[Homonym of *Tyndarichoides* Girault, 1920.]

Prottyndarichus Mercet, 1922: 479. [Replacement name for *Tyndarichoides* Mercet.]

INCLUDED SPECIES. Fifteen, one of which is found in the Neotropics: *nitidus* (Howard; Noyes, 1979: 163) (**comb. n.** from *Prottyndarichus*).

DISTRIBUTION. Argentina, Trinidad, Grenada, Tobago, St Vincent. World: cosmopolitan.

BIOLOGY. Parasites of Lacciferidae and Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Cheiloneurini.

PARENCYRTUS Ashmead

Parencyrtus Ashmead, 1900: 368. Type-species: *Parencyrtus brasiliensis* Ashmead, by monotypy.

INCLUDED SPECIES. One: *brasiliensis* Ashmead, 1900: 368.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

COMMENTS. The holotype is lost, see Kerrich (1967: 152) and Gordh & Trjapitzin (1978: 712). This genus is very possibly the same as *Rhytidothorax* or *Hemencyrtus*.

PAURIDIA Timberlake

(Key couplets: ♀ 236, ♂ 41)

Pauridia Timberlake, 1919b: 206. Type-species: *Pauridia peregrina* Timberlake, by monotypy.

INCLUDED SPECIES. One: *peregrina* Timberlake, 1919b: 208.

DISTRIBUTION. Chile, Peru, Bermuda. World: Nearctic and Ethiopian regions.

BIOLOGY. Parasites of Pseudococcoidea (Homoptera).

COMMENTS. Placed in the tribe Pauridiini.

PELMATENCYRTUS De Santis

(Key couplet: ♀ 32)

Pelmatencyrtus De Santis, 1964: 125. Type-species: *Pelmatencyrtus bonariensis* De Santis, by monotypy.

INCLUDED SPECIES. One: *bonariensis* De Santis (Kerrich, 1978: 156).

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. Placed in the tribe Acroaspidiini by Trjapitzin (1973a), which may be correct.

PENTALITOMASTIX Eady

(Key couplets: ♀ 25; ♂ 51. Figs 15, 126)

Pseudolitomastix Eady, 1960a: 667. Type-species: *Pseudolitomastix nacoieae* Eady, by monotypy.
[Homonym of *Pseudolitomastix* Risbec, 1954.]

Pentalitomastix Eady, 1960b: 173. [Replacement name for *Pseudolitomastix* Eady.]

INCLUDED SPECIES. Five, one of which is found in the Neotropics: *plethorica* Caltagirone, 1966: 145.

DISTRIBUTION. Mexico. World: Palaearctic, South East Asia.

BIOLOGY. Polyembryonic parasites of Pyralidae and Tortricidae (Lepidoptera).

COMMENTS. Placed in the tribe Copidosomatini, subtribe Copidosomatina.

PHEIDOLOXENUS Ashmead

(Key couplet: ♀ 31)

Pheidoloxenus Ashmead, 1904: 328. Type-species: *Pheidoloxenus wheeleri* Ashmead, by monotypy.

Pheidoloxenus Girault, 1915a: 273. Type-species: *Pheidoloxenus wheeleri* Girault, by monotypy.
[Homonym of *Pheidoloxenus* Ashmead, 1904.]

Pheidoloxeniscus Ghesquière, 1946: 369. [Replacement name for *Pheidoloxenus* Girault.]

INCLUDED SPECIES. Two: one not from the Neotropics, the other is being described from Mexico by Dr G. Gordh (= *wheeleri* sensu Mann, 1914, nec Ashmead).

DISTRIBUTION. Mexico. World: Nearctic.

BIOLOGY. Reared from ant nests (Formicidae), probably parasitic on mealybugs (Homoptera: Pseudococcidae) present in nest.

COMMENTS. Placed in the tribe Acroaspidiini.

PLAGIOMERUS Crawford

(Key couplet: ♀ 6; ♂ 7)

Plagiomerus Crawford, 1910: 89. Type-species: *Plagiomerus diaspidis* Crawford, by monotypy.

Parahomalopoda Girault, 1915c: 170. Type-species: *Parahomalopoda peruviansis* Girault, by monotypy.
Syn. n.

INCLUDED SPECIES. Six, three of which are found in the Neotropics: *cyanea* (Ashmead; Dozier, 1927: 273), *diaspidis* Crawford, 1910: 90 and *peruviansis* (Girault, 1915c: 171) (**comb. n.** from *Parahomalopoda*); also one undetermined species from Trinidad (BMNH).

DISTRIBUTION. Mexico, Cuba, Puerto Rico, Trinidad, Peru. World: Nearctic, Palaearctic and Oriental regions.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. *Parahomalopoda peruviansis* differs from the true *Plagiomerus* only in lacking the four lamelliform setae at the apex of scutellum. The undetermined species from Trinidad has a line of four normal setae at the apex of the scutellum. I can therefore see no case for keeping the two genera separate.

Placed in the tribe Habrolepidini, subtribe Habrolepidina.

PLATYLYCA De Santis

(Key couplet: ♀ 146. Fig. 67)

Platylyca De Santis, 1972b: 58. Type-species: *Platylyca quadraticeps* De Santis, by monotypy.

INCLUDED SPECIES. One: *quadraticeps* De Santis, 1972b: 58.

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. Very probably best placed in the tribe Habrolepidini.

PRIONOMASTIX Mayr

(Key couplets: ♀ 112, 132; ♂ 67. Fig. 135)

Prionomastix Mayr, 1876: 725. Type-species: *Encyrtus morio* Dalman, by monotypy.

Liocarus Thomson, 1876: 115, 121. Type-species: *Encyrtus morio* Dalman, by monotypy.

Chestomorpha Ashmead, 1900: 370. Type-species: *Chestomorpha biformis* Ashmead, by monotypy.

Aprionomastix Girault, 1913a: 68. Type-species: *Aprionomastix fasciatipennis* Girault, by monotypy.

INCLUDED SPECIES. Seven, one of which is found in the Neotropics: *fasciatipennis* (Girault) (= *bicarinata* De Santis, 1964: 179), also three undetermined species from Trinidad, Ecuador and Chile (BMNH; CNC, Ottawa).

REFERENCE. Revision of world species: Annecke (1962).

DISTRIBUTION. Argentina, Paraguay, Ecuador, Chile, Trinidad. World: cosmopolitan.

BIOLOGY. Parasites of nymphs of Membracidae (Homoptera).

COMMENTS. Placed in the tribe Prionomasticini, subtribe Prionomasticina.

One undetermined species from Trinidad (CNC, Ottawa) (not included above) falls between *Prionomastix* and *Hexacladia*. The structure of the thorax is close to that of *Prionomastix* but the antennae are typical of *Hexacladia*. On this evidence I believe that the two subtribes Prionomasticina and Hexacladiina should be considered the same.

PRIONOMITUS Mayr

Prionomitus Mayr, 1876: 701. Type-species: *Encyrtus chlorinus* Dalman, by monotypy.

INCLUDED SPECIES. Ten, one of which is found in the Neotropics: *fuscipalpis* Kieffer (in Kieffer & Jörgensen, 1910: 413).

DISTRIBUTION. Argentina. World: Palaearctic region, India.

BIOLOGY. Parasites of nymphs of Psyllidae (Homoptera) (in Europe).

COMMENTS. The holotype ♂ of *fuscipalpis* is apparently lost, but from the original description and biology it is quite unlikely that it is correctly placed in *Prionomitus*. It may be a *Cerchysius*.

Howard (in Riley *et al.*, 1894: 97) recorded *Prionomitus tiliaris* (Dalman) from St Vincent. There is one specimen of the original Smith collection from St Vincent labelled as this species by Howard in the BMNH. It is a female *Psyllaephagus rotundiformis* (Howard).

PROCHILONEURUS Silvestri

(Key couplets: ♀ 58, 95, 107; ♂ 136. Fig. 35)

Prochiloneurus Silvestri, 1915b: 350. Type-species: *Prochiloneurus pulchellus* Silvestri, by monotypy.

Achrysopophagus Girault, 1915d: 89. Type-species: *Achrysopophagus oviductus* Girault, by original designation.

Parachrysopophagus Agarwal, 1965: 65. Type-species: *Achrysopophagus insolitus* Alam, by original designation.

Neoprochiloneurus Viggiani, 1966: 95. Type-species: *Prochiloneurus bolivari* Mercet, by monotypy.

INCLUDED SPECIES. Twenty-nine, four of which are found in the Neotropics: *dactylopii* (Howard) (= *argentiniensis* De Santis, 1964: 357. **Syn. n.**), *io* (Girault, 1920: 187), *rex* (Girault, 1920: 188) and *seini* (Dozier, 1927: 269); also three undetermined species (BMNH; USNM, Washington).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Hyperparasites via other encyrtids parasitizing various families of Coccoidea (Homoptera), mainly Pseudococcidae and Coccidae, and Coccinellidae (Coleoptera).

COMMENTS. I have labelled one syntype female of *Cheiloneurus dactylopii* as LECTOTYPE (USNM, Washington). It is labelled as follows: '1170⁰¹, Cotype 2641 USNM, "*Cheiloneurus dactylopii* How. ♀ Cotype."

Placed in the tribe Cheiloneurini.

***PROTYNDARICHOIDES* gen. n.**

(Key couplet: ♀ 193. Figs 199–201)

Type-species: *Protyndarichoides nigriceps* sp. n.

♀. *Head*. In side view moderately deep, with frontovertex and face more or less gradually curved, but slightly angled just above antennal scrobes. Eye about one-third longer than broad, clothed with a few short inconspicuous pale setae and reaching occipital margin which is sharp. Malar space about two-thirds length of eye and with malar sulcus present. Frontovertex about one-third head width, ocelli forming a slightly acute angle, posterior ocellus separated from occipital margin by less than its own diameter and from eye margin by one half to slightly more than its own diameter. Antennal scrobes shallow and short, not reaching half way from antennal toruli to anterior ocellus and separated dorsally by interantennal prominence which is confluent with frontovertex; antennal torulus separated from mouth margin by slightly more than its own length and from other torulus by about twice its length, its upper margin well below lowest margin of eye. Scape subcylindrical, pedicel conical and about as long or longer than the first two funicle segments together, funicle six-segmented, cylindrical and widening distally, clava three-segmented, about half as long as, and slightly broader than funicle, with a short, oblique, apical truncation; longitudinal sensilla on all flagellar segments except first two. Frontovertex with shallow coriaceous sculpture which becomes shallower and more elongate between eyes and antennal scrobes and on lower parts of face and genae. Frontovertex with a few scattered brown setae, more dense on interantennal prominence. Mandibles with three acute teeth, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view moderately deep with mesoscutum and scutellum quite flat. Mesoscutum without notaular lines, about a half broader than long, axillae more or less touching, scutellum slightly longer than broad, flat and with apex rounded, propodeum medially about one-quarter as long as scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, scutellum with deep, regular, reticulate sculpture but smooth at extreme apex and sides, sculpture on mesopleuron very shallow, elongate anteriorly and more or less reticulate posteriorly, propodeum with a few longitudinal carinae medially and spiracles more or less enclosed by three carinae. Forewing hyaline, slightly less than three times as long as broad; basal cell naked in proximal half, speculum not interrupted and open; submarginal vein slightly expanded apically and with an apical hyaline break, marginal vein about four to five times as long as broad, about twice as long as stigmal which is about as long as postmarginal. Hindwing about five times as long as broad. Mid tibial spur about as long as corresponding basitarsus.

Gaster. About two-thirds as long as thorax, with cerci about half way along, paratergites absent, hypopygium nearly reaching apex of gaster, ovipositor very slightly exerted. Ovipositor short, about half as long as mid tibia, gonostyli slightly less than half length of mid tibial spur.

♂. Unknown.

***Protyndarichoides nigriceps* sp. n.**

(Figs 199–201)

♀. Length: 1.06 mm.

Colour. Frontovertex blackish, face and genae blackish with metallic green and purple reflections; scape, pedicel and first five funicle segments yellow, sixth funicle segment and clava black; thorax largely reddish orange except pronotum, anterior margin of mesoscutum and scutellum which are dark brown with some dark green reflections, legs completely yellow except fore and mid coxae which are yellowish white; gaster black dorsally, except basal tergite which is orange with two dark spots laterally, basal half of ventral surface of gaster orange, distal half black.

Head. Posterior ocellus separated from occipital margin by slightly less than its own diameter and from eye margin by about half of its own diameter. Relative measurements of holotype: head width 59, frontovertex width at anterior ocellus 20.5, malar space 25, eye length 37, eye width 30, POL 8, OOL 2, scape length 35, proportions of antenna as in Fig. 200.

Thorax. Mid tibial spur slightly shorter than corresponding basal tarsal segment. Relative measurements of forewing of holotype: length 174, maximum width 63, length of submarginal vein 71, of marginal vein 14, of stigmal vein 7, of postmarginal vein 5.5. Base of forewing as in Fig. 199.

Gaster. Relative measurements of paratype: length of ovipositor 28, of gonostylus 6 [mid tibia length 52, mid tibial spur length 12.5]. Ovipositor as in Fig. 201.

♂. Unknown.

DISTRIBUTION. Trinidad, Tobago.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, Caura, 2.viii.1976 (*J. S. Noyes*) (BMNH).

Paratype. **Tobago**: 1 ♀, Mt Irvine Bay, 19.vii.1976 (*J. S. Noyes*) (BMNH).

COMMENTS. Also examined, one further undescribed species from Brazil (BMNH).

In some respects this genus is similar to *Rhytidothorax*, i.e. in the flat scutellum, the relatively long propodeum and the short ovipositor. However, the forewing venation suggests a close affinity to the genera included in the tribe Cheiloneurini, and it may be closest to *Parechthrodryinus*. This is suggested by the structure of the scutellum, propodeum and venation, although the relatively short gaster and ovipositor distinguish it.

PSEUDAPHYCUS Clausen

(Key couplets: ♀ 19; ♂ 24)

Pseudaphycus Clausen, 1915: 41. Type-species: *Aphycus angelicus* Howard, by monotypy.

Psilomirinus Brèthes, 1916b: 424. Type-species: *Psilomirinus flavidulus* Brèthes, by monotypy.

INCLUDED SPECIES. Twenty-three, eleven of which are found in the Neotropics: *abtrusus* Gahan, *angelicus* (Howard), *angustifrons* Gahan, *dysmicocci* Bennett, *ferrisianae* Bennett, *flavidulus* (Brèthes), *griseus* De Santis, *mundus* Gahan, *perdignus* Compere & Zinna, 1955: 105, *prosopidis* Timberlake and *utilis* Timberlake; also two undetermined species from Trinidad and Brazil (BMNH).

REFERENCES. Revision: Gahan (1946); see also Bennett (1955) and De Santis (1964: 150–161).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Aphycini, subtribe Aphycina. It is very close to *Acerophagus* and *Timberlakia* from which it can be separated using the characters given in the key.

PSEUDHOMALOPODA Girault

(Key couplets: ♀ 6; ♂ ??)

Pseudhomalopoda Girault, 1915c: 171. type-species: *Pseudhomalopoda prima* Girault, by monotypy.

INCLUDED SPECIES. Four, one of which is found in the Neotropics: *prima* Girault, 1915c: 171.

DISTRIBUTION. Mexico, West Indies. World: Australia, Indonesia, Japan, Hawaii.

BIOLOGY. Parasites of Diaspididae (Homoptera).

COMMENTS. Placed in the tribe Habrolepidini, subtribe Habrolepidina.

PSYLLAEPHAGUS Ashmead

(Key couplets: ♀ 171, 198, 254; ♂ 82. Figs 72, 73, 75, 78)

Psyllaephagus Ashmead, 1900: 382. Type-species: *Encyrtus pachypsyllae* Howard, by original designation.*Mirocerus* Ashmead, 1904: 309. Type-species: *Mirocerus pyelae* Ashmead, by monotypy.*Calluniphilus* Erdős, 1961: 413. Type-species: *Calluniphilus vendicus* Erdős, by monotypy.*Ooencyrtoides* Hoffer, 1963: 568. Type-species: *Ooencyrtus albopilosus* Hoffer, by original designation.*Propsyllaephagus* Blanchard in De Santis, 1964: 235. Type-species: *Propsyllaephagus trellesi* Blanchard, by monotypy.*Mercetia* Bakkendorf, 1965: 139. Type-species: *Copidosoma lusitanicum* Mercet, by monotypy.*Kaszabicyrtus* Szelenyi, 1971: 389. Type-species: *Kaszabicyrtus acutigastris* Szelenyi, by original designation.

INCLUDED SPECIES. One hundred and four, two of which are found in the Neotropics: *rotundiformis* (Howard; Noyes, 1979: 165) and *trellesi* (Blanchard; De Santis, 1964: 236); also four undetermined species from Cuba and Brazil (BMNH).

DISTRIBUTION. Argentina, Brazil, Trinidad, Tobago, St Vincent, Cuba. World: cosmopolitan.

BIOLOGY. Parasites of nymphs of Psyllidae (Homoptera).

COMMENTS. The generic placement of *trellesi* is not too clear since all the types are badly mounted on slides. Trjapitzin (pers. comm.) believes that it may be an *Aphidencyrtus* (sometimes parasitic on psyllid nymphs), but the wing venation indicates that it is best accommodated in *Psyllaephagus*. Placed in the tribe Trechnitini, subtribe Metaprionomitina. The two genera most easily confused with it in the Neotropics are *Aphidencyrtus* and *Ooencyrtus* (tribe Microteriyini) which can be distinguished by the characters given in the key.

RHOPUS Förster

(Key couplets: ♀ 37, 72, 208, 214; ♂ 86, 94. Fig. 19)

Rhopus Förster, 1856: 34. Type-species: *Encyrtus piso* Walker, by monotypy.*Xanthoencyrtus* Ashmead, 1902: 302. Type-species: *Xanthoencyrtus nigroclavatus* Ashmead, by monotypy.*Scelioencyrtus* Girault, 1915d: 161. Type-species: *Scelioencyrtus nigriclavus* Girault, by original designation.*Mirastymachus* Girault, 1915d: 166. Type-species: *Mirastymachus europaeus* Girault, by original designation.*Pholidoceras* Mercet, 1918: 237. Type-species: *Pholidoceras brachyptera* Mercet, by monotypy.*Pholidocerodes* Ferrière, 1956: 358. Type-species: *Pholidoceras parvula* Mercet, by monotypy.

INCLUDED SPECIES. Forty-one, two of which are found in the Neotropics: *desantisellus* Ghesquière, 1957: 18 and *nigroclavatus* (Ashmead, 1902: 302).

DISTRIBUTION. Argentina. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Anagyrini, subtribe Rhopina.

RHYTIDOTHORAX Ashmead

(Key couplets: ♀ 85, 120, 133, 164, 191, 209, 226, 237; ♂ 45, 93. Figs 54–56, 121)

Rhytidothorax Ashmead, 1900: 377. Type-species: *Rhytidothorax marlatti* Ashmead, by monotypy.

INCLUDED SPECIES. Six, five of which are found in the Neotropics: *bollowi* (Mercet, 1928: 10) (**comb. n.** from *Parencyrtus*), *flaviclava* (De Santis, 1964: 95) (**comb. n.** from *Parastenoterys*), *flavicornis* (De Santis, 1967: 74) (**comb. n.** from *Parastenoterys*), *hirtus* (Howard; Noyes, 1979: 159) (**comb. n.** from *Encyrtus*) and *perhispidus* (De Santis, 1964: 97) (**comb. n.** from *Parastenoterys*); also at least 25 undetermined species (BMNH; CNC, Ottawa).

DISTRIBUTION. Argentina, Brazil, Panama, Ecuador, West Indies. World: Nearctic region, ?Africa, Australia.

BIOLOGY. Unknown.

COMMENTS. I have examined the holotype ♀ of *Rhytidothorax marlatti*. In my opinion it is congeneric with the South American species previously incorrectly placed in *Parastenoterys* Girault (this genus is distinct from *Rhytidothorax*) and differs only in the shape of the head (similar in shape to *Simondsiella*, Figs 82, 83) and in having stronger setigerous punctures on the frontovertex. The shape of the head of the South American species varies greatly and in most it is relatively deep, although some do approach that of *marlatti*. A few also have well-marked setigerous punctures on the frontovertex. The genus also occurs in Australia and Africa except that the African species appear to have a short third (upper) tooth.

The genus appears to be morphologically diverse; in some groups of species the head is very deep and almost similar in shape to some *Hunterellus*, and the fore tibia is quite expanded and flattened with the apical tarsal segment from slightly to greatly enlarged. In this group also, the funicle segments are relatively short and the frontovertex and scutellum are sometimes highly polished, although occasionally quite deeply sculptured. This group is perhaps the most self-contained, although it is difficult to reliably separate it from *Rhytidothorax*. The group includes *perhispidus*, *flavicornis* and *hirtus*. The other main group contains species with a shallower head, more deeply sculptured scutellum and longer funicle segments. At either extreme the species are very different, but taken as a whole it seems that they would all be best placed in a single genus. All species have the eyes and frontovertex with long conspicuous setae, the mandibles unidentate or bidentate (upper tooth relatively long) or perhaps with a very short third (upper) tooth, the scutellum flat and in larger species with a very fine apical carina with two upright setae at apex, a relatively long propodeum, medially at least one-sixth as long as the scutellum and with distinct sculpture, a short ovipositor about half the length of the gaster and a hypopygium which does not reach the apex of the gaster. In addition the antenna is quite characteristic: pedicel relatively long, first funicle segment relatively long and following segments progressively becoming shorter.

Trjapitzin & Gordh (1978b) place the genus in the tribe Bothriothoracini, subtribe Bothriothoracina, which I believe is incorrect. The marginal vein is relatively long, the hypopygium does not extend to the apex of the gaster and the mandibles are narrower and usually only with one or two very unequal teeth. The characters are conflicting with those given by Trjapitzin for this tribe.

***SHENAHETIA* gen. n.**

(Key couplets: ♀ 74, 221; ♂ 129. Figs 41, 137, 202–206)

Type-species: *Shenahetia masneri* sp. n.

♀. *Head*. In side view similar to that of *Mariola* (Fig. 42), very shallow, hardly convex and prognathous, the occipital foramen situated more than half way up head. Eye about one half times longer than broad, with short to moderately long hairs and nearly reaching occipital margin which is acute. Malar space about half length of eye with malar sulcus absent. Frontovertex just greater than half head width; ocelli forming an obtuse angle, posterior ocellus situated less than its own diameter from occipital margin and about its own diameter from eye margin. Antennal scrobes very shallow and short (Fig. 41), not as long as an antennal torulus; antennal torulus situated almost at mouth margin and separated from other torulus by about two and a half to three times its own length. Scape subcylindrical or foliaceously flattened, pedicel conical and about half as long as funicle which is six-segmented, all segments transverse, broadening apically and more or less cylindrical, clava two-segmented, broader than funicle and rounded apically; longitudinal sensilla on fifth and sixth funicle segments and clava. Frontovertex with a few sparse setae, sculpture absent or extremely shallow and irregular so that it has a polished appearance. Mandibles narrow, with three acute teeth, the middle the longest, maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view quite shallow and dorsally flattened. Mesoscutum without notaular lines, about one half broader than long, axillae almost meeting, scutellum slightly broader than long with apex rounded and produced as a short flange, propodeum not more than one-fifth as long as scutellum. Pronotum and mesoscutum with very shallow shagreened sculpture, scutellum devoid of sculpture and highly polished, propodeum smooth except for some very shallow sculpture medially. Forewing hyaline or slightly infumate,

about two and a half times as long as broad; basal cell sparsely hairy and naked in its proximal one-third, speculum not interrupted and open; submarginal vein slightly expanded apically and with an apical hyaline break, marginal vein about three times as long as broad, stigmal slightly shorter, postmarginal very short. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. About one-half longer than thorax, cerci at about two-fifths along gaster, paratergites absent, hypopygium extending past apex of gaster so that it is clearly visible in dorsal view, exerted part of ovipositor about half as long as gaster and with sheaths distinctly downcurved apically. Ovipositor (Fig. 206) about twice as long as mid tibia with gonostylus slightly longer than mid tibia.

♂. Body moderately dorso-ventrally flattened. Antennal scrobes semicircular, slightly longer than in female, antennal torulus just less than its own length from mouth margin and separated from other torulus by about its own length; antenna with pedicel about as long as first two funicle segments together, funicle segments about as long as broad or slightly longer than broad and clothed with setae which are more than twice as long as diameter of segments, clava entire, longitudinal sensilla present on sixth funicle segment and clava. Gaster slightly shorter than thorax; aedeagus about half as long as mid tibia and digiti each with one apical spine.

***Shenahetia masneri* sp. n.**
(Figs 41, 137, 202–205)

♀. Length (excluding ovipositor): 0.92–1.00 mm (holotype 1.00 mm).

Colour. Body dark brown with some purplish and golden reflections on face and thorax, basal tergite of gaster with bluish green reflections; scape and pedicel testaceous with dorsum of scape and basal half of pedicel pale brown, flagellum brown; legs testaceous yellow, except the following which are brown: fore and hind femora, distal half of mid femur, extreme base of each tibia and apical segment of hind tarsus; forewing hyaline; occasionally ovipositor sheaths paler towards base, but usually pale brown.

Head. Frontovertex with extremely shallow, fine, shagreened sculpture which is slightly deeper and more irregular between ocelli and more elongate on genae; a few scattered setae near ocelli, along inner eye margins, on clypeus and genae; ocelli forming an angle of about 115° ; eyes clothed in short pale setae; fifth funicle segment without longitudinal sensilla. Relative measurements of paratype: head width 46, frontovertex width at anterior ocellus 25, malar space 13, eye length 28, eye width 18, scape length 21, proportions of antennae as in Fig. 202.

Thorax. Dorsum of thorax with a few scattered dark setae on pronotum and mesoscutum, scutellum with fewer setae; mid tibial spur shorter than mid basal tarsal segment. Relative measurements of forewing of paratype: length 120, maximum width 43, length of submarginal vein 45, of marginal vein 6.5, of stigmal vein 5, of postmarginal vein 1; of hindwing: length 85, maximum width 15. Base of forewing as in Fig. 203.

Gaster. Exserted part of ovipositor about three-quarters as long as mid tibia or nearly half as long as gaster. Relative lengths of paratype: length of ovipositor 78, of gonostylus 33 (mid tibia 40).

♂. Length: 0.75–1.00 mm.

Similar to female except for antenna (Fig. 204) and genitalia (Fig. 205). Relative measurements of paratype: head width 47, frontovertex width at anterior ocellus 26.5, scape length 19.5, proportions of antennae as in Fig. 204, length of hindwing 80, width of hind wing 20.

DISTRIBUTION. Trinidad.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, Chaguaramas Bay, 16.vii.1976 (*J. S. Noyes*) (BMNH).

Paratypes. **Trinidad**: 4 ♀, Curepe, Santa Margarita Circular Road, iii–iv.1974, Moericke trap; 2 ♂, Curepe, Santa Margarita Circular Road, 24.v.–8.vi.1974 and 15–27.ix.1974, Moericke trap (*F. D. Bennett*); 1 ♂, Caroni, Gran Couva, 27.vi.1976 (*J. S. Noyes*). (BMNH; CNC, Ottawa.)

COMMENTS. I have also examined one other undescribed species from Trinidad which differs from the type-species in having the scape broadened and flattened, the frontovertex with conspicuous setae and the forewings slightly infumate.

The genus is similar in appearance to some species of *Avetianella* and *Szelenyiola* but differs in

lacking the membranous lines on the frontovertex. It is very probably closely related to *Tanyencyrtus* from which it can be separated by the characters given in the key.

Probably best placed in the tribe Microteryni near the subtribes Oobina and Platencyrtina. Named in honour of Dr L. Masner.

***SIMMONDSIELLA* gen. n.**

(Key couplet: ♀ 170. Figs 81–83, 207)

Type-species: *Simmondsiella flaviptera* sp. n.

♀. *Head*. In side view relatively shallow, similar to *Trichomasthus* but rather more evenly curved. Eye about one-third longer than broad, with a few very short hairs and overreaching occipital margin which is sharp. Malar space about half as long as eye, with malar sulcus present but weak. Frontovertex about one-quarter head width; ocelli forming an acute angle of about 60°, posterior ocellus separated from occipital margin by about its own diameter and from eye margin by less than half its diameter. Antennal scrobes semicircular, shallow and short, meeting dorsally but not reaching half way between antennal toruli and anterior ocellus, antennal torulus separated from mouth margin and other torulus by about its own length, its dorsal margin about level with lowest margin of eyes. Antennal scape subcylindrical and with two very strong, conspicuous setae on outer face near apex, pedicel conical and longer than first funicle segment, funicle six-segmented, all segments longer than broad, cylindrical and slightly widening distally, clava three-segmented and with apex rounded. Frontovertex with regular, reticulate, almost punctiform sculpture, becoming shallower and more irregular on lower parts of face and genae, a few sparse setae present. Mandibles with two acute teeth and a broad truncation which is about as broad as the two teeth together across their bases.

Thorax. Moderately deep in side view and dorsally convex. Mesoscutum without notaular lines, about twice as broad as long, axillae widely separated by posterior margin of mesoscutum, scutellum slightly wider than long, evenly convex and with apex rounded, propodeum medially about one-eighth as long as scutellum. Pronotum, mesoscutum and axillae with shallow coriaceous sculpture, scutellum with basal half similar but sculpture more regular and tending towards punctiform, apical half completely smooth and polished, mesopleuron with raised elongate sculpture anteriorly becoming more regular and reticulate posteriorly, propodeum with shallow, irregular sculpture medially. Forewing hyaline, slightly more than twice as long as broad; basal cell sparsely pilose and naked in proximal third, speculum not interrupted and open; submarginal vein with an apical hyaline break, marginal vein punctiform, stigmal vein about as long as marginal and postmarginal veins together. Mid tibial spur about as long as mid basitarsus.

Gaster. Slightly shorter than thorax and with cerci in basal third, ovipositor only slightly protruding, apex of hypopygium about two-thirds along gaster.

♂. Unknown.

Named in honour of Dr F. J. Simmonds.

***Simmondsiella flaviptera* sp. n.**

(Figs 81–83, 207)

♀. Length: 1.24 mm.

Colour. Frontovertex dark purplish green, paler and more shiny on antennal scrobes, interantennal prominence and cheeks below eyes tinged coppery; antenna testaceous with basal half of pedicel and dorsum of scape brown; pronotum and mesoscutum with long, dark brown setae, pronotum, mesoscutum, axillae and anterior half of scutellum dark purplish brown; apical half of scutellum very shiny deep blue mixed with purple, mesopleuron brown; coxae and femora brown, mid and hind femora with apices yellow, tibiae and tarsi yellow; forewings faintly suffused yellow, particularly towards base; gaster with basal tergite dark metallic green, other tergites coppery mixed metallic pale green.

Head. Relative measurements (Figs 82, 83): head width 101, frontovertex width at anterior ocellus 26, malar space 31, eye length 64, eye width 48, POL 14, OOL 2, scape length 42, proportions of antenna as in Fig. 207.

Thorax. Relative measurements of forewing (Fig. 81): length 222, maximum width 100, length of

submarginal vein 88, of marginal vein 6, of stigmal vein 15.5, of postmarginal vein 9.5; of hind wing: length 148, maximum width 43.

♂. Unknown.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Brazil**: Santa Catarina, Nova Teutonia, 25.viii.1944 (*F. Plaumann*) (BMNH).

COMMENTS. Close to *Trichomasthus* and *Hadrencyrtus* Annecke & Mynhardt (tribe Microterytini, subtribe Microterytina). It differs from both in having a punctiform marginal vein, and from *Hadrencyrtus* in having subhyaline forewings, eyes overreaching the occipital margin, a shorter malar space and long setae on the antennal flagellum. Both *Trichomasthus* and *Hadrencyrtus* have relatively long marginal veins (usually at least three times as long as broad) and *Hadrencyrtus* has infusate forewings, eyes only just reaching occipital margin, a longer malar space (about three-quarters of the length of the eye) and the setae on the antennal flagellum very short.

SOLENAPHYCUS De Santis

(Key couplets: ♀ 9, 25; ♂ 13. Fig. 8)

Solenaphycus De Santis, 1972b: 54. Type-species: *Solenaphycus vianai* De Santis, by monotypy.

INCLUDED SPECIES. One: *vianai* De Santis, 1972b: 54.

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. I am unable to place the genus according to Trjapitzin's (1973b) classification of the Encyrtidae.

SOLENOENCYRTUS De Santis

(Key couplet: ♀ 232)

Solenocyrtus De Santis, 1964: 207. Type-species: *Solenocyrtus platensis* De Santis, by monotypy.

INCLUDED SPECIES. One: *platensis* De Santis, 1964: 207.

DISTRIBUTION. Argentina.

BIOLOGY. Unknown.

COMMENTS. Possibly related to *Metaphycus* (tribe Aphycini, subtribe Paraphycina).

STEMMATOSTERES Timberlake

(Key couplets: ♀ 9; ♂ 14. Fig. 11)

Stemmatosteres Timberlake, 1918: 352. Type-species: *Stemmatosteres apterus* Timberlake, by monotypy.

INCLUDED SPECIES. Three, one of which is found in the Neotropics: *apterus* Timberlake, 1918: 354.

DISTRIBUTION. Uruguay. World: Nearctic region, Europe.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Aphycini, subtribe Aphycina.

SYRPHOPHAGUS Ashmead

(Key couplets: ♀ 176, 205, 259; ♂ 84, 121, 123, 140. Fig. 79)

Syrphophagus Ashmead, 1900: 397. Type-species: *Encyrtus mesograptae* Ashmead, by original designation.
Echthrobaccha Perkins, 1906: 253. Type-species: *Echthrobaccha injuriosa* Perkins, by monotypy.
Syrphidencyrtus Blanchard, 1940: 107. Type-species: *Syrphidencyrtus bacchae* Blanchard, by monotypy.
Syn. n.

INCLUDED SPECIES. Twenty-nine, six of which are found in the Neotropics: *bacchae* (Blanchard) (**comb. n.** from *Syrphidencyrtus*), *flavitibiae* (De Santis) (**comb. n.** from *Syrphidencyrtus*), *nigricornis* (De Santis) (**comb. n.** from *Syrphidencyrtus*), *nubeculus* De Santis, *quadrimaculati* (Ashmead, 1881: 171) and *silvai* (Brèthes, 1921a: 8), also three undetermined species from Trinidad and Brazil (BMNH).

REFERENCE. De Santis (1964: 128–135, 194).

DISTRIBUTION. Argentina, Chile, Brazil, Trinidad, Puerto Rico. World: cosmopolitan.

BIOLOGY. Parasites of larvae of Syrphidae (Diptera).

COMMENTS. I have examined a specimen determined by De Santis as *Syrphidencyrtus bacchae*. *Syrphophagus flavitibiae* may be out of place in this genus since the scutellum appears to be very flat and shiny but this may be because the holotype is slide mounted and the specimen slightly flattened by the pressure of the coverslip.

The genus is close to *Aphidencyrtus* and they are sometimes almost impossible to separate, except on relative size, unless the host is known. I believe that the two genera should eventually be synonymized.

Placed in the tribe Microteriyini, subtribe Syrphophagina.

SZELENYIOLA Trjapitzin

(Key couplets: ♀ 213; ♂ 58. Fig. 95)

Szelenyiola Trjapitzin, 1977: 160. Type-species: *Szelenyiola nearctica* Trjapitzin, by monotypy.

INCLUDED SPECIES. One, not found in the Neotropics, but one undescribed species from Brazil (BMNH).

DISTRIBUTION. Brazil. World: Nearctic.

BIOLOGY. Probably parasitic on eggs of Buprestidae or Scolytidae (Coleoptera).

COMMENTS. Placed in the tribe Microteriyini, subtribe Oobiina.

TACHARDIOBIUS Timberlake

(Key couplets: ♀ 195; ♂ 56. Fig. 93)

Tachardiobius Timberlake, 1926: 19. Type-species: *Tachardiobius nigricans* Timberlake, by monotypy.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *silvestrii* De Santis, 1956: 188.

DISTRIBUTION. Argentina. World: Nearctic region.

BIOLOGY. Parasites of Lacciferidae (Homoptera).

COMMENTS. The South American species is very close to the type-species, but differs in having more extensive pale markings on the face, two lateral white spots on the base of the gaster and paler legs.

Placed in the tribe Aphycini, subtribe Paraphycina by Trjapitzin & Gordh (1978b).

TANYENCYRTUS De Santis

(Key couplets: ♀ 74, 221; ♂ 129. Fig. 139)

Tanyencyrtus De Santis, 1972b: 57. Type-species: *Tanyencyrtus divisus* De Santis, by monotypy.

INCLUDED SPECIES. One: *divisus* De Santis, 1972b: 57.

DISTRIBUTION. Argentina.

BIOLOGY. Parasites of fruit-mining larvae of Lepidoptera.

COMMENTS. See comments under *Shenahetia*.

***TETARTICLAVA* gen. n.**

(Key couplet: ♀ 23. Figs 16, 208, 209)

Type-species: *Tetarticlava yoshimotoi* sp. n.

♀. *Head*. In side view, moderately deep, most rounded level with top of antennal scrobes, frontovertex slightly convex. Eye about one-third longer than broad, hairy and reaching occipital margin which is acute. Malar space slightly longer than half length of eye and with malar sulcus present. Frontovertex at narrowest point about one-third head width; ocelli forming an acute angle of about 60°, posterior ocellus separated from occipital and eye margins by less than its own diameter. Antennal scrobes moderately impressed, reaching much further than half way from antennal toruli to anterior ocellus and joined dorsally; antennal torulus slightly more than its own length from mouth margin and nearly twice its own length from other torulus, its upper margin slightly below lowest margin of eye. Scape subcylindrical and stout, pedicel longer than first two funicle segments together, funicle five-segmented, all segments transverse and cylindrical, broadening distally, clava four-segmented, nearly as long as funicle and with apex slightly pointed; longitudinal sensilla on all flagellar segments except the first two. Frontovertex with fairly conspicuous dark setae, sculpture shallow coriaceous, more transversely elongate between anterior ocellus and top of antennal scrobes, becoming more longitudinally elongate on cheeks. Mandibles with two acute teeth and a rudimentary third (lowest) tooth, the middle tooth much the longest; maxillary palpi four-segmented, labial palpi three-segmented.

Thorax. In side view, moderately deep with mesoscutum and scutellum fairly convex. Mesoscutum without notaular lines and about twice as broad as long, axillae meeting, scutellum slightly broader than long, propodeum medially about one-eighth as long as scutellum. Pronotum, mesoscutum, axillae and scutellum with shallow coriaceous sculpture, except on scutellum where it is distinctly deeper, mesopleuron with irregular, shallow, coriaceous sculpture, propodeum medially quite smooth. Forewing hyaline, but with some slight infumation in basal cell, slightly more than twice as long as broad; basal cell sparsely hairy with a completely naked triangular area proximally, speculum not interrupted and open; submarginal vein with an apical hyaline break, marginal vein about two to three times as long as broad, about as long as stigmal and slightly longer than postmarginal. Hindwing nearly four times as long as broad. Mid tibial spur about as long as mid basal tarsal segment.

Gaster. Slightly shorter than thorax, cerci in basal third, hypopygium reaching apex of gaster, ovipositor not or hardly protruding. Ovipositor about as long as gaster or slightly longer than mid tibia, gonostylus about one-third as long as mid tibia.

♂. Unknown.

***Tetarticlava yoshimotoi* sp. n.**

(Figs 16, 208, 209)

♀. Length: 0.73–0.89 mm (holotype 0.81 mm).

Colour. Body black with faint green, purple and brassy reflections; antennae brown, legs brown except for tarsi and apex of mid tibia which are testaceous.

Head. Relative measurements of holotype: head width 55, frontovertex width at anterior ocellus 21, malar space 23, eye length 35.5, eye width 26, POL 7.5, OOL 3.5, scape length 26, proportions of antenna as in Fig. 16.

Thorax. Relative measurements of forewing of holotype: length 126, maximum width 57, length of submarginal vein 52, of marginal vein 9, of stigmal vein 8.5, of postmarginal vein 6.5; of hindwing: length 88, maximum width 24. Base of forewing as in Fig. 208.

Gaster. Relative measurements of paratype: length of ovipositor 67, of gonostylus 18 [mid tibia 55]. Ovipositor as in Fig. 209.

♂. Unknown.

DISTRIBUTION. Trinidad, St Vincent.

BIOLOGY. Unknown.

MATERIAL EXAMINED

Holotype ♀, **Trinidad**: St George, Lopinot, 10.viii.1976 (*J. S. Noyes*) (BMNH).

Paratypes. **Trinidad**: 1 ♀, Curepe, Santa Margarita, Circular Road, 25.x.-7.xii.1974 (*M. N. Beg*). **St Vincent**: 1 ♀, Richmond, 10.vii.1976 (*J. S. Noyes*). (BMNH; CNC, Ottawa.)

COMMENTS. The genus bears some resemblance to *Forcipestricis* and is possibly related. It differs in the antennal structure and the lack of tubercles on the scutellum. I am unable to place it according to Trjapitzin's (1973b) classification of the Encyrtidae.

Named in honour of Dr C. Yoshimoto.

TETRACNEMOIDEA Howard
(Key couplets: ♀ 27, ♂ 3. Fig. 24)

Tetracnemoidea Howard, 1898b: 232. Type-species: *Tetracnemoidea australiensis* Howard, by monotypy.
Tetracnemopsis Ashmead, 1900: 358. Type-species: *Tetracnemos westwoodi* Cockerell, by monotypy.
Arhopoideus Girault, 1915d: 174. Type-species: *Arhopoideus brevicornis* Girault, by original designation.
Hungariella Erdős, 1946: 144. Type-species: *Hungariella piceae* Erdős, by monotypy.

INCLUDED SPECIES. Sixteen, two of which are found in the Neotropics: *peregrina* (Compere) (**comb. n.** from *Arhopoideus*) and *brevicornis* (Girault) (= *pretiosus* Timberlake) (**comb. n.** from *Arhopoideus*).

REFERENCE. World revision: Kerrich (1967: 154-166).

DISTRIBUTION. Brazil, Argentina, Chile, Trinidad, Bermuda. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Tetracnemini, subtribe Arhopoideina.

TETRACNEMUS Westwood
(Key couplets: ♀ 43; ♂ 4. Fig. 25)

Tetracnemus Westwood, 1837: 258. Type-species: *Tetracnemus diversicornis* Westwood, by monotypy.
Tetracladia Howard, 1892: 367. Type-species: *Tetracladia texana* Howard, by designation of Ashmead, 1900: 358.
Tetralophidea Ashmead, 1900: 348. Type-species: *Tetralophidea bakeri* Ashmead, by monotypy.
Tetralophiellus Ashmead, 1900: 357. Type-species: *Tetralophiellus brivicollis* Ashmead, by monotypy.
Paracalocerinus Girault, 1915d: 142. Type-species: *Paracalocerinus australiensis* Girault, by monotypy.
Masia Mercet, 1919b: 470. Type-species: *Masia bifasciatella* Mercet, by monotypy.
Anusiella Mercet, 1923b: 286. Type-species: *Anusia heydeni* Mayr, by monotypy.
Placoceras Erdős, 1946: 1. Type-species: *Placoceras colocense* Erdős, by monotypy.
Comperencyrtus De Santis, 1964: 106. Type-species: *Comperencyrtus maculipennis* De Santis, by monotypy.

INCLUDED SPECIES. Twenty, one of which is found in the Neotropics: *maculipennis* (De Santis, 1964: 108; 1968: 150).

DISTRIBUTION. Argentina, Brazil. World: cosmopolitan except apparently Ethiopian region.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Tetracnemini, subtribe Tetracnemina.

TIMBERLAKIA Mercet
(Key couplets: ♀ 14; ♂ 23)

Timberlakia Mercet, 1925: 9. Type-species: *Acerophagus europaeus* Mercet, by monotypy.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *europaea* (Mercet, 1921: 191).

DISTRIBUTION. Mexico, Trinidad. World: cosmopolitan.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Aphycini, subtribe Aphycina.

TINEOPHOCTONUS Ashmead

(Key couplet: ♀ 107)

Tineophoctonus Ashmead, 1900: 351. Type-species: *Phaenodiscus armatus* Ashmead, by original designation.

INCLUDED SPECIES. Two, one of which is found in the Neotropics: *armatus* (Ashmead; De Santis, 1964: 364).

DISTRIBUTION. Argentina. World: Nearctic region, Europe.

BIOLOGY. Parasites of gall-inhabiting Tineidae (Lepidoptera), Cynipidae (Hymenoptera) and larvae of Anobiidae and Cerambycidae (Coleoptera).

COMMENTS. Placed in the tribe Cheiloneurini.

TRICHOMASTHUS Thomson

(Key couplets: ♀ 206; ♂ 84, 119)

Trichomasthus Thomson, 1876: 142. Type-species: *Encyrtus cyaneus* Dalman, by designation of Gahan & Fagan, 1923: 148.

Coccidoxenus Crawford, 1913a: 248. Type-species: *Coccidoxenus portoricensis* Crawford, by monotypy.

Tetracnemella Girault, 1915d: 170. Type-species: *Tetracnemella australiensis* Girault, by original designation.

Stenoteropsis Girault, 1915d: 176. Type-species: *Stenoteropsis abjectus* Girault, by monotypy.

INCLUDED SPECIES. Fifty, four of which are found in the Neotropics: *tucumanus* (De Santis, 1964: 251) (**comb. n.** from *Coccidoxenus*), *mexicanus* (Girault, 1917b: 21) (**comb. n.** from *Coccidoxenus*), *brasiliensis* (Gomes, 1941: 402; 1942: 36) (**comb. n.** from *Coccidoxenus*) and *portoricensis* (Crawford, 1913a: 248); also two further undetermined species from Brazil and Trinidad (BMNH).

DISTRIBUTION. Brazil, Mexico, West Indies. World: cosmopolitan.

BIOLOGY. Parasites of Diaspididae, Coccidae, Pseudococcidae and Eriococcidae (Homoptera).

COMMENTS. The undetermined species from Trinidad is unusual in that the marginal vein of the female is very long (about nine times as long as broad) and it has been reared from *Phenococcus grenadensis* Green & Laing (Homoptera: Pseudococcidae). The clava of the male of this species has the appearance of being two-segmented in dry-mounted material, but in slide-mounted material it is clearly only one-segmented.

Placed in the tribe Microteriyini, subtribe Microteriyina.

TYNDARICHOIDES Girault

(Key couplets: ♀ 98, 136)

Tyndarichoides Girault, 1920: 189. Type-species: *Tyndarichoides mexicanus* Girault, by monotypy.

INCLUDED SPECIES. One: *mexicanus* Girault, 1920: 189.

DISTRIBUTION. Mexico.

BIOLOGY. Unknown.

COMMENTS. Very close to *Metaphycus* (tribe Aphycini, subtribe Paraphycina) and can only be reliably separated on the characters given in the key. The two genera should very probably be considered synonymous.

ZAOMMA Ashmead

(Key couplets: ♀ 71, 160, 228, ♂ 146)

Zaomma Ashmead, 1900: 401. Type-species: *Encyrtus argentipes* Howard, by monotypy.

Apterencyrtus Ashmead, 1905: 5. Type-species: *Apterencyrtus pulchricornis* Ashmead, by monotypy.

Metallonoidea Girault, 1915c: 170. Type-species: *Metallonoidea brittanica* Girault, by monotypy.

Chiloneurinus Mercet, 1921: 646. Type-species: *Chiloneurus microphagus* Mayr, by monotypy.

Richardsius Alam, 1957: 439. Type-species: *Apterencyrtus thomsoniscae* Alam, by original designation.

Metapterencyrtus Tachikawa, 1963: 213. Type-species: *Metapterencyrtus eriococci* Tachikawa, by monotypy.

INCLUDED SPECIES. Fourteen, three of which are found in the Neotropics: *argentipes* (Howard; Noyes, 1979: 166), *epytus* (Walker, 1839: 69) (**comb. n.** from *Encyrtus*) and *lambinus* (Walker) (= *microphagus* Mayr); De Santis, 1964: 361); also six or seven further undetermined species from Brazil, Argentina and Trinidad (BMNH; CNC, Ottawa).

REFERENCE. Key to species: Gordh & Trjapitzin (1979).

DISTRIBUTION. Peru, Argentina, Brazil, Trinidad and St Vincent. World: Nearctic, Ethiopian and Palearctic regions.

BIOLOGY. Hyperparasites of other chalcids, mainly Encyrtidae, parasitizing Diaspididae (Homoptera).

COMMENTS. The single female of *Encyrtus epytus* in the collections of the BMNH (labelled '*Encyrtus Epytus* Walker, 1302a Bahia') is here designated LECTOTYPE. It differs from the other South American species in having all the funicle segments subequal in size and subquadrate.

Placed in the tribe Cheiloneurini.

ZAPLATYCERUS Timberlake

(Key couplets: ♀ 46; ♂ 36. Fig. 27)

Zaplatycerus Timberlake, 1925: 173. Type-species: *Zaplatycerus fullawayi* Timberlake, by monotypy.

INCLUDED SPECIES. Two: *fullawayi* Timberlake and *planiscutellum* Kerrich.

REFERENCE. Revision: Kerrich (1978: 152–155).

DISTRIBUTION. Colombia, Panama, Trinidad.

BIOLOGY. Parasites in Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Chrysoplatycerini, subtribe Chrysoplatycerina.

ZARHOPALUS Ashmead

(Key couplets: ♀ 51; ♂ 39. Fig. 28)

Zarhopalus Ashmead, 1900: 406. Type-species: *Zarhopalus sheldoni* Ashmead, by original designation.

Anagyrella Girault, 1915c: 168. Type-species: *Anagyrella corvina* Girault, by monotypy.

INCLUDED SPECIES. Five, three of which are found in the Neotropics: *clavatus* Kerrich, *inquisitor* (Howard) and *putophilus* Bennett; also three undetermined species from Brazil, Belize and Trinidad (BMNH; CNC, Ottawa).

REFERENCE. Revision: Kerrich (1978: 126–131).

DISTRIBUTION. Brazil, Trinidad, Belize and Mexico. World: Nearctic region.

BIOLOGY. Parasites of Pseudococcidae (Homoptera).

COMMENTS. Placed in the tribe Neodiscodini (Encyrtinae) by Trjapitzin (1973*b*) but transferred later to the Tetracneminae by Trjapitzin & Gordh (1978*b*).

ZETETICONTUS Silvestri

(Key couplets: ♀ 84, 182, 225; ♂ 41, 72, 107)

Aratus Howard, 1897: 155. Type-species: *Aratus scutellatus* Howard, by monotypy. [Homonym of *Aratus* Milne-Edwards, 1853.]

Zeteticontus Silvestri, 1915*b*: 343. Type-species: *Zeteticontus abilis* Silvestri, by monotypy.

Mirrencyrtus Girault, 1915*d*: 115. Type-species: *Mirrencyrtus glabriscutellum* Girault, by monotypy.

Aratiscus Ghesquière, 1946: 368. [Replacement name for *Aratus* Howard.]

INCLUDED SPECIES. Thirteen, three of which are found in the Neotropics: *insularis* (Howard), *laevigatus* (De Santis, 1972*b*: 55) and *scutellatus* (Howard), also three or four undescribed species from Brazil, Ecuador and Trinidad (BMNH; CNC, Ottawa).

REFERENCES. Revision: Subba Rao (1972); key to South American species: Noyes (1979: 167–168).

DISTRIBUTION. Throughout the Neotropics. World: cosmopolitan.

BIOLOGY. Parasites of larvae of Nitidulidae and Silvanidae (Coleoptera).

COMMENTS. Placed in the tribe Bothriothoracini, subtribe Coenocercina.

Host index

ARACHNIDA

ACARINA

Ixodidae

Hunterellus

INSECTA

NEUROPTERA

Chrysopidae

Isodromus, *Moorella*

Hemerobiidae

Isodromus

ORTHOPTERA

Meromyzobia

BLATTODEA

Comperia

HETEROPTERA

Ooencyrtus

Pentatomidae

Hexacladia, *Ooencyrtus*

Scutelleridae

Hexacladia

HOMOPTERA

AUCHENORRHYNCHA

Cheiloneurus (via Dryinidae), *Helegonatopus* (via Dryinidae)

Cercopidae

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Echthrodryinus (via other hymenopterous parasites)

Membracidae

Prionomastix

STERNORRHYNCHA

Aphididae

Aphidencyrtus

Psyllidae

Aphidencyrtus, *Prionomitus*, *Psyllaephagus*

COCCOIDEA

Acleridae

?*Bennettisca*, *Cheiloneurus* (via other Encyrtidae), *Desantisella* (via

Chamaemyiidae), *Microterys*, *Mucencyrtus*, ?*Paramucrona*

Asterolecaniidae

Habrolepis

Coccidae

Ammonoencyrtus, *Anicetus*, *Cheiloneurus* (via other Encyrtidae and Aphelinidae),

Coccidaphycus, *Coccidoctonus* (via other Encyrtidae and Pteromalidae),

Diversinervus, *Gahaniella* (via other

Encyrtidae), *Metaphycus*, *Microterys*,

Prochiloneurus (via other Encyrtidae),

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Adelencyrtus, *Ameromyzobia*, *Anabrolepis*,
Aphycomorpha, *Arrhenophagoidea*,
Arrhenophagus, *Cheiloneurus* (via other
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Coccidencyrus, *Comperiella*, *Habrolepis*,
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Neococcidencyrus, *Plagiomerus*,
Pseudhomalopoda, *Trichomasthus*, *Zaomma*
 (via other Encyrtidae)

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Acerophagoides, *Andinoencyrtus*,
Aphycomorpha, *Atelaphycus*, *Metaphycus*,
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Microterys

Kerriidae

Metaphycus, *Microterys*, *Parechthrodryinus*,
Tachardiobius

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Aztecencyrtus, *Brethesiella*, *Cheiloneurus* (via
 other Encyrtidae), *Homosemion*

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Acerophagus, *Acroaspida*, *Aenasius*,
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Cheiloneurus (via Encyrtidae),
Chrysoplatycerus, *Cirrhencyrtus*,
Coccidoctonus (via Encyrtidae and
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Leptomastidea, *Microterys*, *Neodusmetia*,
Parechthrodryinus, *Pauridia*,
 ?*Pelmatencyrtus*, ?*Pheidoloxenus*,
Prochiloneurus (via other Encyrtidae),
Pseudaphycus, *Rhopus*, *Stemmatosteres*,
Tetracnemoidea, *Tetracnemus*, *Timberlakia*,
Zaplatycerus, *Zarhopalus*

LEPIDOPTERA

Eggs: *Ooencyrtus*

Larvae: *Copidosoma*, *Echthrodryinus* (via
 other parasitic Hymenoptera), *Epiencyrtus*,
Litomastix, ?*Neapsilophrys*, *Tanyencyrtus*

Gelechiidae

Apsilophrys, *Paralitomastix*

Gracillariidae

Paraleurocerus

Lyonetiidae

Echthrodryinus (via other parasitic
 Hymenoptera), *Parablastothrix*

Nepticulidae

Parablastothrix

Pterophoridae

Ageniaspis

Pyralidae

Paralitomastix, *Pentalitomastix*

Tineidae

Ageniaspis, *Tineophoctonus*

Tortricidae

Pentalitomastix

Yponomeutidae

Ageniaspis, *Copidosoma*

COLEOPTERA**Anobiidae**

Tineophoctonus

Buprestidae

Avetianella, *Szelenyiola*

Cerambycidae

Avetianella, *Tineophoctonus*

Coccinellidae

Anagyrus, *Coccidoctonus*, *Homalotylus*,
Prochiloneurus (via other Encyrtidae)

Nitidulidae

Zeteticontus

Silvanidae

Zeteticontus

Scolytidae

Avetianella, *Szelenyiola*

DIPTERA**Cecidomyiidae**

Coccidoctonus

Ceratopogonidae

Forcipestris

Chamaemyiidae

Cerchysius, *Cheiloneurus*, *Desantisella*

Drosophilidae

Cheiloneurus

Syrphidae

Bothriothorax, *Exoristobia*, *Syrphophagus*

Tachinidae

Exoristobia

HYMENOPTERA

Echthrodryinus

Aphelinidae

Cheiloneurus, *Aphidencyrtus*

Aphidiidae

Aphidencyrtus

Braconidae

Echthrodryinus

Cynipidae

?*Tineophoctonus*

Dryinidae

Cheiloneurus, *Echthrodryinus*, *Helegonatopus*

Encyrtidae

Cheiloneurus, *Coccidoctonus*, *Epiencyrtus*,
Gahaniella, *Prochiloneurus*, *Zaomma*

Formicidae (?)

Pheidoloxenus

Pteromalidae
Coccidoctonus

Xylocopidae
Coelopencyrtus

Proposed new synonymies

(Junior synonyms on right)

Generic

Anagyrus Howard = *Gyranusia* Brèthes **syn. n.**,
= *Paranusia* Brèthes **syn. n.**,
= *Philoponectroma* Brèthes **syn. n.**

Anathrix Burks = *Aglyptoideus* De Santis **syn. n.**
Apsilophrys De Santis = *Copidencyrtus* De Santis **syn. n.**

Brethesiella Porter = *Neocopidosoma* Blanchard **syn. n.**, = *Noblancharidia* Ghesquière **syn. n.**

Cheiloneurus Westwood = *Metacheiloneurus* Hoffer **syn. n.**

Chrysoplatycerus Ashmead = *Metaplatycerus* Gordh & Trjapitzin **syn. n.**

Coccidoctonus Crawford = *Quaylea* Timberlake **syn. n.**

Ericydnus Walker = *Grandoriella* Domenichini **syn. n.**

Leptomastidea Mercet = *Leptanusia* De Santis **syn. n.**

Metaphycus Mercet = *Notoencyrtus* De Santis **syn. n.**

Moorella Cameron = *Chrysopophilus* Timberlake **syn. n.**

Plagiomerus Crawford = *Parahomalopoda* Girault **syn. n.**

Syrphophagus Ashmead = *Syrphidencyrtus* Blanchard **syn. n.**

Specific

Prochiloneurus dactylopii
(Howard) = *Achrysopophagus argentinensis* De Santis **syn. n.**

Proposed new combinations

(Original genus in brackets)

Anagyrus bifasciatus (Brèthes) **comb. n.**
(*Paranusia*)

Anagyrus porteri (Brèthes) **comb. n.** (*Gyranusia*)
Anathrix rustica (De Santis) **comb. n.**
(*Aglyptoideus*)

Apoanagyrus malenotus (De Santis) **comb. n.**
(*Leptomastix*)

Apoanagyrus montivagus (De Santis) **comb. n.**
(*Leptomastix*)

Apsilophrys capsicum (Burks) **comb. n.**
(*Copidosoma*)

Apsilophrys gracilis (De Santis) **comb. n.**
(*Copidencyrtus*)

Aztecencyrtus iceryae (Howard) **comb. n.**
(*Cerchysius*)

Brethesiella coccidophaga (Blanchard) **comb. n.**
(*Neocopidosoma*)

Cheiloneurus gahani (Dozier) **comb. n.**
(*Achrysopophagus*)

Cirrhencyrtus diversicolor (Compere) **comb. n.**
(*Aphycus*)

Coccidoctonus whittieri (Girault) **comb. n.**
(*Cerchysius*)

Copidosoma silvestrii (Costa Lima) **comb. n.**
(*Paralitomastix*)

Desobius sylvicola (De Santis) **comb. n.**
(*Tyndarichus*)

Ericydnus lamasi (Domenichini) **comb. n.**
(*Grandoriella*)

Hemencyrtus brasiliensis (Ashmead) **comb. n.**
(*Bothriothorax*)

Leptomastidea bahiensis (Compere) **comb. n.**
(*Leptomastix*)

Leptomastidea dispar (Kerrich) **comb. n.**
(*Leptomastix*)

Litomastix calypso (Crawford) **comb. n.**
(*Holcencyrtus*)

Lohiella flaviclava (Howard) **comb. n.** (*Encyrtus*)
Mercetencyrtus gracilicornis (De Santis) **comb. n.**
(*Syrphophagus*)

Metaphycus ceroplastae (Dozier) **comb. n.**
(*Coccidoctonus*)

Metaphycus discolor (De Santis) **comb. n.**
(*Aphycus*)

Metaphycus guttofasciatus (De Santis) **comb. n.**
(*Notoencyrtus*)

Metaphycus maculipes (Howard) **comb. n.**
(*Aphycus*)

Metaphycus niger (Brèthes) **comb. n.** (*Aphycus*)
Metaphycus oaxacae (Howard) **comb. n.**
(*Aphycus*)

Metaphycus ogloblini (De Santis) **comb. n.**
(*Dicarnosis*)

Metaphycus portoricensis (Dozier) **comb. n.**
(*Euaphycus*)

Metaphycus rusti (Timberlake) **comb. n.**
(*Aphycus*)

Moorella compressiventris (Timberlake) **comb. n.**
(*Chrysopophilus*)

Mucencyrtus aclerdae (De Santis) **comb. n.**
(*Aenasioidea*)

Parablastothrix chilensis (Brèthes) **comb. n.**
(*Archinus*)

Paraleurocerus reticulatus (De Santis) **comb. n.**
(*Agéniaspis*)

Parechthrodyrinus nitidus (Howard) **comb. n.**
(*Encyrtus*)

Plagiomerus peruviensis (Girault) **comb. n.**
(*Parahomalopoda*)

Rhytidothorax bollowi (Mercet) **comb. n.**
(*Parencyrtus*)
Rhytidothorax flaviclava (De Santis) **comb. n.**
(*Parastenoterys*)
Rhytidothorax flavicornis (De Santis) **comb. n.**
(*Parastenoterys*)
Rhytidothorax hirtus (Howard) **comb. n.**
(*Encyrtus*)
Rhytidothorax perhispidus (De Santis) **comb. n.**
(*Parastenoterys*)
Syrphophagus bacchae (Blanchard) **comb. n.**
(*Syrphidencyrtus*)
Syrphophagus flavitibiae (De Santis) **comb. n.**
(*Syrphidencyrtus*)
Syrphophagus nigricornis (De Santis) **comb. n.**
(*Syrphidencyrtus*)
Tetracnemoidea peregrina (Compere) **comb. n.**
(*Tetracnemus*)
Tetracnemoidea brevicornis (Girault) **comb. n.**
(*Arhopoideus*)

Trichomasthus brasiliensis (Gomes) **comb. n.**
(*Coccidoxenus*)
Trichomasthus mexicanus (Girault) **comb. n.**
(*Coccidoxenus*)
Trichomasthus tucumanus (De Santis) **comb. n.**
(*Coccidoxenus*)
Zaomma epytus (Walker) **comb. n.** (*Encyrtus*)

Lectotype designations

(Present genus in brackets)

Aseirba caudata Cameron (*Aseirba*)
Cheiloneurus dactylopii (Howard)
(*Prochiloneurus*)
Encyrtus epytus Walker (*Zaomma*)
Hemencyrtus herbertii Ashmead (*Hemencyrtus*)
Ooencyrtus chrysopae Crawford (*Ooencyrtus*)
Ooencyrtus trinidadensis Crawford (*Ooencyrtus*)

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References

- Agarwal, M. M. 1965. Taxonomy of encyrtid parasites (Hymenoptera: Chalcidoidea) of Indian Coccoidea. *Acta hymenopt., Tokyo* 2: 37–97.
— 1966. Three undescribed genera and species of Encyrtidae (Hymenoptera: Chalcidoidea) parasitic on coccids. *Proc. Indian Acad. Sci. (B)* 63: 67–79.
Alam, S. M. 1957. Taxonomy of some encyrtid parasites (Hymenoptera, Chalcidoidea) of British scale insects. *Trans. R. ent. Soc. Lond.* 109: 421–466.
Alayo, D. P. & Hernández, L. R. 1978. *Introducción al estudio de los Himenópteros de Cuba*. Superfamilia Chalcidoidea. 105 pp. Habana.
Annecke, D. P. 1962. New reared species of *Prionomastix* Mayr with synonymical notes (Hymenoptera, Encyrtidae). *S. Afr. J. agr. Sci.* 5: 503–513.
— 1967. The genera *Anicetus* Howard, 1896, *Paracerapterocerus* Girault, 1920, and allies, with descriptions of new genera and species (Hymenoptera: Encyrtidae). *Trans. R. ent. Soc. Lond.* 119: 99–169.
— 1968. Records and descriptions of African Encyrtidae. 4. (Hymenoptera: Chalcidoidea). *J. ent. Soc. sth. Afr.* 31: 249–269.
Annecke, D. P. & Mynhardt, M. J. 1970. On some species of *Habrolepis* Foerster and *Adelencyrtus* Ashmead (Hym., Encyrtidae) in southern Africa and Mauritius. *Entomophaga* 15: 127–148.
— 1971. The species of the *zebratus*-group of *Metaphycus* Mercet (Hym., Encyrtidae) from South Africa, with notes on some extra-limital species. *Revue Zool. Bot. afr.* 83: 322–360.
— 1972. The species of the *insidiosus*-group of *Metaphycus* Mercet in South Africa with notes on some extra-limital species (Hymenoptera: Encyrtidae). *Revue Zool. Bot. afr.* 85: 227–274.
— 1974. On the identity of *Copidosoma koehleri* Blanchard, 1940 (Hymenoptera: Encyrtidae). *J. ent. Soc. sth. Afr.* 37: 31–33.

- Annécke, D. P. & Prinsloo, G. L.** 1974. On some new and described species of arrhenophagine Encyrtidae (Hymenoptera). *J. ent. Soc. sth. Afr.* **37**: 35–47.
- Ashmead, W. H.** 1881. On two new chalcid flies from Florida, parasitic upon the larvae of syrphus flies. *Can. Ent.* **13**: 170–172.
- 1889. A final word about the genus *Rileyia*. *Can. Ent.* **21**: 37–38.
- 1891. An encyrtid with six-branched antennae. *Insect Life* **3**: 455–457.
- 1894. Notes on cotton insects found in Mississippi. *Insect Life* **7**: 240–247.
- 1900. On the genera of chalcid-flies belonging to the subfamily Encyrtinae. *Proc. U.S. natn. Mus.* **22**: 323–412.
- 1902. The hymenopterous parasites of *Phenacoccus cavalliae* Ckll. *Can. Ent.* **34**: 301–302.
- 1904a. Classification of the chalcid flies of the superfamily Chalcidoidea, with descriptions of new species in the Carnegie Museum, collected in South America by Herbert H. Smith. *Mem. Carneg. Mus.* **1** (4): i–ix, 225–551, 39 pls.
- 1904b. A list of the Hymenoptera of the Philippine Islands, with descriptions of new species. *Jl N.Y. ent. Soc.* **12**: 1–22.
- 1905. New Hymenoptera from the Philippine Islands. *Can. Ent.* **37**: 3–8.
- Aurivillius, C.** 1888. *Arrhenophagus*, ett nytt släkte bland Encyrtiderna. *Ent. Tidskr.* **9**: 144–147, 1 pl.
- Bakkendorf, O.** 1965. Perilampidae, Eupelmidae, Encyrtidae (Hym., Chalcidoidea) from the Hansted Reservation with descriptions of new species. *Ent. Meddr* **30** (2): 105–187.
- Blanchard, E. E.** 1936. Apuntes sobre Chalcidoideos argentinos, nuevos y conocidos. *Revta Soc. ent. argent.* **8**: 7–32.
- 1940. Apuntes sobre Encyrtidos argentinos. *An. Soc. cient. Argent.* **130**: 106–128.
- Brèthes, J.** 1913. Himenópteros de la América meridional. *An. Mus. nac. Hist. nat. B. Aires* **24**: 35–160.
- 1916a. Description de trois Chalcididae du Chili. *Revta chil. Hist. nat.* **20**: 8–10.
- 1916b. Hyménoptères parasites de l'Amérique méridionale. *An. Mus. nac. Hist. nat. B. Aires* **27**: 401–430.
- 1919. Cueillette d'insectes du Rio Blanco. *Revta chil. Hist. nat.* **22**: 161–171.
- 1920. Description d'un Encyrtide nouveau du Chili. *Revta chil. Hist. nat.* **24**: 137–139.
- 1921a. Nouveaux Hyménoptères parasites du Chili. *An. Zool. apl.* **8**: 6–8.
- 1921b. Description d'un *Ceroplastes* de la république Argentine et de son parasite. *Bull. Soc. ent. Fr.* **1921**: 79–80.
- Brues, C. T.** 1910. Some parasitic Hymenoptera from Vera Cruz, Mexico. *Bull. Am. Mus. nat. Hist.* **28**: 79–85.
- Burks, B. D.** 1952. A new mealy bug parasite (Hymenoptera: Encyrtidae). *Jl N.Y. ent. Soc.* **40**: 179–182.
- 1958. A recharacterization of the genus *Coelopencyrtus*, with descriptions of two new species (Hymenoptera: Encyrtidae). *J. Wash. Acad. Sci.* **48**: 22–26.
- 1967. A new polyembryonic parasite of the pepper moth (Hymenoptera: Encyrtidae). *Proc. ent. Soc. Wash.* **69**: 53–55.
- 1968. A new chalcidoid parasite of a ceratopogonid midge (Hymenoptera, Encyrtidae). *Ent. News* **79**: 236–240.
- 1972. The genus *Hexacladia* Ashmead (Hymenoptera: Encyrtidae). *Proc. ent. Soc. Wash.* **74** (4): 363–371.
- Caltagirone, L. E.** 1966. A new *Pentalitomastix* from Mexico (Hymenoptera: Encyrtidae). *Pan-Pacif. Ent.* **42** (2): 145–151.
- Cameron, P.** 1884. Insecta. Hymenoptera (part). *Biologia cent.-am.* **32**: 121–128.
- 1913. The Hymenoptera of the Georgetown Museum, part V. *J. R. Agric. Soc., Demerara* **3**: 105–137.
- Clausen, C. P.** 1915. Mealy bugs of citrus trees. *Bull. Calif. Univ. agric. Coll., Berkeley* no. 258: 19–48.
- Compere, H.** 1926. Descriptions of new coccid inhabiting chalcidoid parasites (Hymenoptera). *Univ. Calif. Pubs Ent.* **4**: 1–31.
- 1928. New coccid-inhabiting chalcidoid parasites from Africa and California. *Univ. Calif. Pubs Ent.* **4**: 208–230.
- 1936. A new genus and species of Encyrtidae parasitic in the pineapple mealybug, *Pseudococcus brevipes* (Ckll.). *Proc. Hawaii. ent. Soc.* **9**: 171–174.
- 1938. A report on some miscellaneous African Encyrtidae in the British Museum. *Bull. ent. Res.* **29**: 315–337.
- 1939. Mealybugs and their insect enemies in South America. *Univ. Calif. Pubs Ent.* **7**: 57–74.
- 1940. The African species of *Metaphycus* Mercet. *Bull. ent. Res.* **31**: 7–33.
- 1947. A report on a collection of Encyrtidae with description of new genera and species. *Univ. Calif. Pubs Ent.* **8**: (1): 1–24.

- 1957. Descriptions of species of *Metaphycus* recently introduced into California and some corrections. *Boll. Lab. Ent. agr. Filippo Silvestri* **15**: 221–230.
- Compere, H. & Annecke, D. P.** 1960. A reappraisal of *Aphycus* Mayr, *Metaphycus* Mercet and related genera (Encyrtidae). *J. ent. Soc. sth. Afr.* **23**: 375–389.
- 1961. Descriptions of parasitic Hymenoptera and comments (Hymenopt.: Aphelinidae, Encyrtidae, Eulophidae). *J. ent. Soc. sth. Afr.* **24**: 17–71.
- Compere, H. & Zinna, G.** 1955. Tre nuovi generi e cinque nuove specie di Encyrtidae. *Boll. Lab. Ent. agr. Filippo Silvestri* **14**: 94–116.
- Costa Lima, A. da** 1956. Sobre dois microimenoópteros provavelmente poliembriônicos (Chalcidoidea, Encyrtidae, Encyrtinae). *Boll. Lab. Zool. gen. agr. Portici* **33**: 29–34.
- Costa Lima, A. da & Ferreira, O.** 1963. Sobre um Microhimenóptero calcidóide provavelmente poliembriônico, endoparasito da larva de "*Xylocopa* sp." (Encyrtidae, Encyrtinae). *Revta bras. Biol.* **23**: 429–434.
- Crawford, J. C.** 1910. Three new genera and species of parasitic Hymenoptera. *Proc. U.S. natn. Mus.* **38**: 87–90.
- 1911. Descriptions of new Hymenoptera. No. 3. *Proc. U.S. natn. Mus.* **41**: 267–282.
- 1912. Descriptions of new Hymenoptera, No. 5. *Proc. U.S. natn. Mus.* **43**: 163–188.
- 1913a. Descriptions of new Hymenoptera, No. 6. *Proc. U.S. natn. Mus.* **45**: 241–260.
- 1913b. Descriptions of new Hymenoptera, No. 8. *Proc. U.S. natn. Mus.* **46**: 343–352.
- 1914. New parasitic Hymenoptera from British Guiana. *Proc. ent. Soc. Wash.* **16**: 85–88.
- Dahlbom, A. G.** 1857. Svenska Små-Ichneumonernas Familjer och slükten. *Öfvers K. VetenskAkad. Förh.* **14**: 289–298.
- Dalla Torre, K. W. von** 1897. Zur Nomenclatur der Chalcididen-Genera. *Wien. ent. Ztg* **16**: 83–88.
- 1898. *Catalogus Hymenopterorum hucusque descriptorum systematicus et synonymicus*. V. Chalcididae et Proctotrupidae. 598 pp. Leipzig.
- Dalman, J. W.** 1820. Försök till Uppställning af Insect-familjen Pteromalini, i synnerhet med afscen de på de i Sverige funne Arter. *K. svenska VetenskAkad. Handl.* **41**: 123–174, 177–182.
- De Santis, L.** 1939. Sobre dos nuevos Encirtidos hallados en la república Argentina con descripción de un nuevo género (Hymenoptera, Chalcidoidea). *Notas Mus. La Plata (Zool.)* **4**: 327–338.
- 1950. Lista de sinonimias establecidas para los géneros y sub-géneros de Chalcidoidea (Hymenoptera). *Revta Mus. La Plata (N.S.)* **6**: 47–67.
- 1955. Los insectos de las Islas Juan Fernandez. 27 Chalcidoidea I (Hymenoptera). *Revta chil. Ent.* **4**: 167–198.
- 1956. Nota sobre himenópteros parásitos de dos cochinillas patagónicas. *Boll. Lab. Zool. gen. agr. Portici* **33**: 187–197.
- 1960. Descripción de un nuevo género y de una nueva especie de encirtido del Brasil (Hymenoptera: Chalcidoidea). *Acta Trab. y Congr. sudamer. Zool.* **1959** (3): 61–65.
- 1964. Encirtidos de la Republica Argentina (Hymenoptera: Chalcidoidea). *An. Comn Invest. cient. Prov. B. Aires* **4**: 9–422.
- 1965. Una nueva especie de *Echthroxylella* de la Republica Argentina (Hymenoptera: Encyrtidae). *Notas Comun Invest. cient.* **2** (9): 3–6.
- 1967a. Adiciones a la fauna Argentina de Encirtidos: I (Hymenoptera: Chalcidoidea). *Acta zool. lilloana* **23**: 67–75.
- 1967b. *Catálogo de los Himenópteros argentinos de la serie Parasítica, incluyendo Bethyloidea*. 337 pp. La Plata.
- 1968. Adiciones a la fauna argentina de Encirtidos. II (Hymenoptera). *Rev. Mus. La Plata (Zool.)* **10** (82): 149–154.
- 1970. Una nueva especie de encirtido del Brasil (Hymenoptera—Encyrtidae). *Bol. Univ. Fed. Parana (Zool.)* **4** (3): 3–15.
- 1972a. Complejo entomofágico de *Aclerda campinensis* (Hom.) en el estado de alagoas (Brasil). *An. Soc. ent. Bras.* **1**: 17–24.
- 1972b. Adiciones a la fauna argentina de encirtidos. III. (Hymenoptera: Chalcidoidea). *Revta peru. Ent. agric.* **15**: 44–60, 24 figs.
- 1979. *Catálogo de los Himenópteros Calcidoideos de América al sur de los Estados Unidos*. 488 pp. La Plata.
- De Santis, L., Sarmiento, J. A. V., Rabinovich, J. E. & Piñero, D. F. de** 1976. Himenópteros parasitoides de *Rhodnius prolixus* (Hem.) en Venezuela. *Revta Soc. ent. argent.* **35**: 135–142.
- Destefani, T.** 1889. Miscellanea imenotterologica Sicula. *Naturalista sicil.* **8**: 140–145.

- Domenichini, G.** 1951. Parassiti e iperparassiti di *Pseudococcus citri* Risso in Italia e nel Peru. *Boll. Zool. agr. Bachic.* **17**: 157–180.
- Doutt, R. L.** 1948. *Arrenoclavus*, a new genus of polyembryonic Encyrtidae (Hymenoptera). *Pan-Pacif. Ent.* **24**: 145–148.
- Dozier, H. L.** 1926. Some new Porto Rican scale parasites (Hymenoptera: Encyrtidae). *Proc. ent. Soc. Wash.* **28**: 97–102.
- 1927. Notes on Porto Rican scale parasites. *J. Dep. Agric. P. Rico* **10**: 267–277.
- 1932. An important new encyrtid parasite of the mealy-bug *Pseudococcus virgatus* (Ckll.). *Proc. ent. Soc. Wash.* **34**: 7–9.
- 1936. Descriptions of two new encyrtid parasites of non-diaspine scales. *Proc. ent. Soc. Wash.* **37**: 183–185.
- 1937. Description of miscellaneous chalcidoid parasites of Porto Rico. *J. Agric. Univ. P. Rico* **21**: 121–135.
- Eady, R. D.** 1960a. A new genus and two new species of Encyrtidae (Hymenoptera, Chalcidoidea) from the banana scab moth, *Nacoleia octasema* (Meyr.). *Bull. ent. Res.* **50**: 667–670.
- 1960b. *Pentalitomastix*, a new name for *Pseudolitomastix* Eady (Hymenoptera, Chalcidoidea). *Bull. ent. Res.* **51**: 173.
- Embleton, A. L.** 1902. On the economic importance of the parasites of Coccidae. *Trans. ent. Soc. Lond.* **35**: 219–229.
- Erdős, J.** 1946a. Description of a new genus and species of the family Encyrtidae (Hymenoptera, Chalcid.). *Fragm. faun. hung.* **9**: 1–2.
- 1946b. Genera nova et species novae chalcidoidarum (Hym.). *Annl. hist.-nat. Mus. natn. hung.* **39**: 131–165.
- 1961. Symbola ad cognitionem faunae encyrtidarum et aphelinidarum Hungariae. *Acta zool. hung.* **7**: 413–423.
- Ferrière, C.** 1956. Encyrtides parasites de cochenilles sur graminées. *Boll. Lab. Zool. gen. agr. Portici* **33**: 350–364.
- Förster, A.** 1856. *Hymenopterologische Studien*. 2. Chalcidae und Proctotrupii. 152 pp. Aachen.
- 1860. Eine zweite Centurie neuer Hymenopteren. *Verh. naturh. Ver. preuss. Rheinl.* **17**: 93–153.
- Fullaway, D. T.** 1913. Report of the entomologist: scale insect parasites. *Rep. Hawaii agric. Exp. Stn.* **1912**: 26–31.
- Gahan, A. B.** 1927. Miscellaneous descriptions of new parasitic Hymenoptera with some synonymical notes. *Proc. U.S. natn. Mus.* **71**: 1–39, 1 pl.
- 1943. A new encyrtid parasitic in the eggs of Hesperidae. *J. Agric. Univ. P. Rico* **27**: 137–139.
- Gahan, A. B. & Fagan, M. M.** 1923. The type species of the genera of Chalcidoidea or chalcid-flies. *Bull. U.S. natn. Mus.* **124**: 1–173.
- Ghesquière, J.** 1946. Contribution à l'étude des Microhyménoptères du Congo Belge. X–XI. *Rev. zool. Bot. afr.* **39**: 367–373.
- 1957. Le genre *Rhopus* Foerster nouveau pour l'Amérique du Sud (Hym. Chalcidoidea, Encyrtidae). *Neotropica* **3** (10): 17–22.
- Girault, A. A.** 1911. The chalcidoid parasites of the coccid *Kermes pubescens* Bogue, with descriptions of two new genera and three new species of Encyrtidae from Illinois. *Can. Ent.* **43**: 168–178.
- 1913a. More new genera and species of chalcidoid Hymenoptera from Paraguay. *Arch. Naturgesch.* (A) **79** (6): 51–69.
- 1913b. Some chalcidoid Hymenoptera from North Queensland. *Arch. Naturgesch.* (A) **79**: 70–90.
- 1915a. Some new chalcidoid Hymenoptera from North and South America. *Ann. ent. Soc. Am.* **8**: 272–278.
- 1915b. Four new encyrtids from Sicily and the Philippines. *Entomologist* **48**: 184–186.
- 1915c. New genera of chalcidoid Hymenoptera. *Jl N.Y. ent. Soc.* **23**: 165–173.
- 1915d. Australian Hymenoptera Chalcidoidea — VII. The family Encyrtidae with descriptions of new genera and species. *Mem. Qd Mus.* **4**: 1–184.
- 1916a. New miscellaneous chalcidoid Hymenoptera with notes on described species. *Ann. ent. Soc. Am.* **9**: 291–308.
- 1916b. A remarkable new genus of Encyrtidae from the West Indies, bearing two ring-joints. *J. N.Y. ent. Soc.* **24**: 232–233.
- 1916c. New Javanese chalcidoid Hymenoptera. *Proc. U.S. natn. Mus.* **51**: 479–485.
- 1916d. New Encyrtidae from North America. *Psyche, Camb.* **23**: 41–50.
- 1917a. Descriptions of miscellaneous chalcid-flies. *Insecutor Inscit. menstr.* **4**: 109–121.
- 1917b. *Descriptiones stellarum novarum*. 22 pp. (privately published).

- 1917c. *Chalcidoidea nova Marilandensis* III. 6 pp. (privately published).
- 1920. New serphidoid, cynipoid and chalcidoid Hymenoptera. *Proc. U.S. natn. Mus.* **58**: 177–216.
- Gomes, J. G. 1941. Um novo parasito de Coccidae (Chalcidoidea — Encyrtidae). *Bolm Soc. bras. Agron.* **4**: 401–404.
- 1942. Subsídios à sistemática dos Calcídeos brasileiros. *Bolm Esc. nac. Agron., Rio de J.* **2**: 9–45.
- Gordh, G. 1975. A new species of *Forcipestricis* Burks, 1968 (Hymenoptera: Encyrtidae) from Puerto-Rico parasitic on *Forcipomyia* (Diptera: Ceratopogonidae). *Fla Ent.* **58**: 239–241.
- Gordh, G. & Trjapitzin, V. A. 1978. A revision of the genus *Echthrodryinus* Perkins, 1906 (Hymenoptera: Encyrtidae). *J. Kans. ent. Soc.* **51**: 711–720.
- 1979. Notes on the genus *Zaomma* Ashmead, with a key to species (Hymenoptera: Encyrtidae). *Pan-Pacif. Ent.* **55**: 34–40.
- Graham, M. W. R. de V. 1958. Notes on some genera and species of Encyrtidae (Hym., Chalcidoidea), with special reference to Dalman's types. *Ent. Tidskr.* **79**: 147–175.
- Hall, J. C. 1974. A new genus and species of mealybug parasite from Paraguay (Hymenoptera: Encyrtidae). *Ent. News* **85**: 19–20.
- Hayat, M., Alam, S. & Agarwal, M. M. 1975. *On Indian Insect Types*. Taxonomic survey of encyrtid parasites (Hymenoptera: Encyrtidae) in India. 2, 112 pp. Aligarh.
- Hoffer, A. 1954. Encyrtidae našich státních přírodních rezervací II. *Ochrana přírody* **9**: 169–173.
- 1957. Československé druhy subtribu Cheiloneurii. *Čas. čsl. Spol. ent.* **54**: 327–355.
- 1960. A revision of the Czechoslovak genera of the subfamily Encyrtinae with a reduced number of funicle segments (Hymenoptera, Chalcidoidea). *Sb. faun. Práci, ent. Odd. nár. Mus. Praze* **6**: 93–120.
- 1963. Descriptions of new species of the family Encyrtidae from Czechoslovakia (Hym., Chalcidoidea). I. *Sb. faun. Práci ent. Odd. nár. Mus. Praze* **35**: 549–592.
- 1965. Předběžná zpráva o chalcidkách, parazitujících na družicích čeledi Dryinidae (Hym.) na území našeho státu. *Zpr. čsl. Spol. ent.* **1** (3): 12–17.
- 1970. Zweiter Beitrag zur Taxonomie der palaearktischen Arten der Gattung *Aphidencyrtus* Ashm. (Hym., Chalc., Encyrtidae). *Studia Ent. Forest.* **1**: 65–80.
- Howard, L. O. 1882. A new *Icerya* parasite. *Insect Life* **4**: 378–379.
- 1887. In Report of the entomologist. *Rep. U.S. Dep. Agric.* **1886**: 488.
- 1888. The chalcid genus *Rileyia*. *Can. Ent.* **20**: 191–195.
- 1892. Insects of the subfamily Encyrtidae with branched antennae. *Proc. U.S. natn. Mus.* **15**: 361–369.
- 1897. On the Chalcididae of the Island of Grenada, B.W.I. *J. Linn. Soc. (Zool.)* **26**: 129–178.
- 1898a. A new parasite of the harlequin cabbage bug. *Can. Ent.* **30**: 17–18.
- 1898b. On some new parasitic insects of the subfamily Encyrtinae. *Proc. U.S. natn. Mus.* **21**: 231–248.
- 1906. An interesting new genus and species of Encyrtidae. *Ent. News* **17**: 121–122.
- 1908. Another chalcidoid parasite of a tick. *Can. Ent.* **40**: 239–241.
- 1910. On some parasites reared or supposed to be reared from the eggs of the gypsy moth. *Tech. Ser. Bur. Ent. U.S.* **19** (1): i–v, 1–12.
- Howard, L. O. & Ashmead, W. H. 1896. On some reared parasitic hymenopterous insects from Ceylon. *Proc. U.S. natn. Mus.* **18**: 633–648.
- Ishii, T. 1923. Observations on the hymenopterous parasites of *Ceroplastes rubens* Mask., with descriptions of new genera and species of the subfamily Encyrtinae. *Bull. imp. Pl. Quarant. Stn Yokohama* **3**: 69–114.
- Jansson, A. 1957. Zwei neue Microhymenopteren aus Schweden, *Batrachencyrtus callidii* nov. gen. nov. sp. (Chalcidoidea, Encyrtidae), *Aphanogmus annulicornis* nov. sp. (Proctotrupoidea, Calliceratidae). *Ent. Tidskr.* **78**: 71–74.
- Kerrich, G. J. 1953. Report on Encyrtidae associated with mealy bugs on cacao in Trinidad and on some other species related thereto. *Bull. ent. Res.* **44**: 789–810.
- 1954. A systematic study of the encyrtid genus *Cerchysius* Westwood (Hym., Chalcidoidea). *Ann. Mag. nat. Hist.* (12) **7**: 371–379.
- 1964. On the European species of *Dusmetia* Mercet and a new Oriental genus (Hym., Chalcidoidea, Encyrtidae). *Entomophaga* **9**: 75–79.
- 1967. On the classification of the anagryne Encyrtidae, with a revision of some of the genera (Hymenoptera: Chalcidoidea). *Bull. Br. Mus. nat. Hist. (Ent.)* **20**: 143–250.
- 1978. A revision of the dinocarsiine Encyrtidae with a study of the genus *Pelmatencyrtus* De Santis (Hymenoptera: Chalcidoidea). *J. Linn. Soc. (Zool.)* **62**: 109–159.
- Kieffer, J. J. & Jörgensen, P. 1910. Gallen und Gallentiere aus Argentinien. *Zentbl. Bakt. ParasitKde* (2) **27**: 362–444.
- Latreille, P. A. 1809. *Genera crustaceorum et insectorum* **4**, 399 pp. Parisius et Argentorati.

- Mani, M. S.** 1935. A new encyrtid chalcid genus *Krishnieriella* gen. nov. from India. *Rec. Indian Mus.* **37**: 421–423.
- Mann, W. M.** 1914. Some myrmecophilous insects from Mexico. *Psyche, Camb.* **21**: 173–184.
- Mayr, G. L.** 1876. Die europäischen Encyrtiden. *Verh. zool.-bot. Ges. Wien* **25**: 675–778.
- Mercet, R. G.** 1916. Calcidoides de España. *Boln R. Soc. esp. Hist. nat.* **16**: 112–117.
- 1917a. Especies españolas del género *Aphycus*. *Boln R. Soc. esp. Hist. nat.* **17**: 128–139.
- 1917b. Un nuevo género de Encirtinos. *Boln R. Soc. esp. Hist. nat.* **17**: 203–206.
- 1917c. Géneros nuevos de Encirtinos (Himenópteros, Chalcididos). *Boln R. Soc. esp. Hist. nat.* **17**: 537–544.
- 1918. Géneros nuevos de Encirtinos de España. *Boln R. Soc. esp. Hist. nat.* **18**: 234–241.
- 1919a. Encirtinos de España. *Boln R. Soc. esp. Hist. nat.* **19**: 96–102.
- 1919b. Notas sobre Encirtinos (Himenópteros, Chalcididos). *Boln R. Soc. esp. Hist. nat.* **19**: 470–478.
- 1921. *Fauna Ibérica*. Himenópteros Fam. Encirtidos, 727 pp. Madrid.
- 1923a. Adiciones à la fauna española de Encirtidos. 1ª nota. *Boln R. Soc. esp. Hist. nat.* **22**: 474–481.
- 1923b. Encirtidos de Europa Central, nuevos o poco conocidos (2ª nota). *Boln R. Soc. esp. Hist. nat.* **23**: 286–292.
- 1924. Los géneros *Leptomastidea*, *Callipteroma* y *Gyranusa*. *Boln R. Soc. esp. Hist. nat.* **24**: 252–260.
- 1925. El género *Aphycus* y sus afines. *Eos, Madr.* **1**: 7–31.
- 1928. Nota sobre algunos Encirtidos americanos (Hym. Chalc.). *Eos, Madr.* **4**: 6–12.
- Miller, C. D. F.** 1961. A new genus and species of chalcid (Hymenoptera, Encyrtidae). *Can. Ent.* **93**: 494–496.
- Myartseva, S. N.** 1977a. A new species of encyrtid *Anathrix acanthococci* Myartseva, sp. n. (Hymenoptera, Chalcidoidea) — a parasite of the coccid *Acanthococcus* sp. (Homoptera, Coccoidea) on wormwood in southern Turkmenistan. [In Russian.] *Izv. Akad. Nauk turkmen. SSR. (Biol.)* **1977** (4): 41–46.
- 1977b. The genus *Neococcidencyrtus* (Hymenoptera, Encyrtidae) new to the USSR, and a description of a new species, *N. steinbergi* sp. n. from southwestern Turkmenia. [In Russian.] *Ent. Obozr.* **56**: 171–176. [English translation: *Ent. Rev., Wash.* **56**: 130–133.]
- Noyes, J. S.** 1979. The West Indian species of Encyrtidae described by L. O. Howard, 1894 and 1897 (Hymenoptera, Chalcidoidea). *Syst. Ent.* **4**: 143–169.
- Peck, O.** 1963. A catalogue of the nearctic Chalcidoidea (Insecta; Hymenoptera). *Can. Ent. Suppl.* **30**: 1–1092.
- Perkins, R. C. L.** 1906. Leaf-hoppers and their natural enemies (VIII). *Bull. Hawaiian Sug. Plrs' Ass. Exp. Stn (Ent.)* **1**: 239–267.
- 1907. Parasites of leaf-hoppers. *Bull. Hawaiian Sug. Plrs' Ass. Exp. Stn (Ent.)* **4**: 1–59.
- Porter, C. E.** 1920. Cambio de nombre genérico [*Brethesia* to *Brethesiella*]. *Revta chil. Hist. nat.* **24**: 16.
- Prinsloo, G. L. & Annecke, D. P.** 1978. On some new and described Encyrtidae (Hymenoptera: Chalcidoidea) from the Ethiopian region. *J. ent. Soc. sth. Afr.* **41**: 311–331.
- 1979. A key to the genera of Encyrtidae from the Ethiopian region, with descriptions of three new genera (Hymenoptera: Chalcidoidea). *J. ent. Soc. sth. Afr.* **42**: 349–382.
- Ratzeburg, J. T. C.** 1844. *Die Ichneumoniden der Forstinsecten in entomologischer und forstlicher Beziehung*. **1**, 224 pp. Berlin.
- Riley, C. V., Ashmead, W. H. & Howard, L. O.** 1894. Report upon the parasitic Hymenoptera of the island of St. Vincent. *J. Linn. Soc. (Zool.)* **25**: 56–254.
- Risbec, J.** 1951. Les Chalcidoïdes de l'Afrique occidentale française. II. Les Microgasterinae de l'Afrique occidentale française. *Mém. Inst. fr. Afr. noire* **13**: 7–409.
- 1954. Chalcidoïdes et Proctotrupoïdes de l'Afrique occidentale française (4^e Supplément). *Bull. Inst. fr. Afr. noire (A)* **16**: 1035–1092.
- 1959. Encyrtidae de Madagascar. (Hym. Chalcid.). *Bull. Acad. malgache (N.S.)* **35**: 17–44.
- Rosen, D.** 1969. A systematic study of the genus *Acerophagus* E. Smith, with descriptions of new species (Hym., Encyrtidae). *Hilgardia* **40**: 41–72.
- 1976. The species of *Microterys* (Hymenoptera: Encyrtidae). An annotated world list. *Ann. ent. Soc. Am.* **69**: 479–485.
- Silvestri, F.** 1915a. Contributo alla conoscenza degli insetti dell'olivo dell'Eritrea e dell'Africa meridionale. *Boll. Lab. Zool. gen. agr. R. Scuola Agric. Portici* **9**: 240–334.
- 1915b. Descrizione di nuovi Imenotteri Calcididi africani. *Boll. Lab. Zool. gen. agr. R. Scuola Agric. Portici* **9**: 337–377.
- Smith, E. A.** 1880. Biological and other notes on *Pseudococcus aceris*. *N. Am. Ent.* **1**: 73–87.
- Subba Rao, B. R.** 1957. Some new species of Indian Hymenoptera. *Proc. Ind. Acad. Sci. (B)* **46**: 376–390.

- 1970. A redescription of *Exoristobia* Ashmead 1904 and description of two new species (Hymenoptera: Encyrtidae). *Proc. R. ent. Soc. Lond. (B)* **39**: 109–113.
- 1971. New genera and species of encyrtids (Hymenoptera: Encyrtidae). *J. nat. Hist.* **5**: 209–224.
- 1973. Description of two new species of *Carabunia* Waterston (Hymenoptera: Encyrtidae). *Orient. Insects* **7**: 485–489.
- Szelényi, G.** 1971. Data to the Mongolian encyrtid fauna (Hym., Chalcidoidea). I. Ergebnisse der zoologischen Forschungen von Dr Z. Kaszab in der Mongolei. Nr. 272. *Acta zool. hung.* **17**: 387–396.
- 1972. Neue Encyrtiden aus Ungarn (Hymenoptera, Chalcidoidea). *Annls hist.-nat. Mus. natn. hung.* **64**: 347–353.
- Tachikawa, T.** 1955. Notes on the genus *Anabrolepis* Timberlake, 1920 (Hymenoptera: Encyrtidae). *Mem. Ehime Univ.* (6) **1**: 9–14.
- 1963. Revisional studies on the Encyrtidae of Japan (Hymenoptera: Chalcidoidea). *Mem. Ehime Univ.* (6) **9**: 1–264.
- 1978. Hosts of the Encyrtidae in the World (Hymenoptera: Chalcidoidea). *Trans. Shikoku ent. Soc.* **14**: 43–63.
- Tachikawa, T. & Valentine, E. W.** 1969. A new genus of Encyrtidae from New Zealand (Hymenoptera: Chalcidoidea). *N.Z. J. Sci.* **12**: 546–552.
- Thomson, C. G.** 1876. *Skandinavians Hymenoptera*. 4, 192 pp. Lund.
- Timberlake, P. H.** 1916. Revision of the parasitic hymenopterous insects of the genus *Aphycus* Mayr with notice of some related genera. *Proc. U.S. natn. Mus.* **50**: 561–640.
- 1918. New genera and species of Encyrtinae from California parasitic in mealy bugs (Hymenoptera). *Univ. Calif. Publs Ent.* **1**: 347–367.
- 1919a. Revision of the parasitic Chalcidoid flies of the genera *Homalotylus* Mayr and *Isodromus* Howard, with descriptions of two closely related genera. *Proc. U.S. natn. Mus.* **56**: 133–194.
- 1919b. Descriptions of new genera and species of Hawaiian Encyrtidae (Hymenoptera). *Proc. Hawaii. ent. Soc.* **4**: 197–231.
- 1920a. Correction of two generic names in Coleoptera and Hymenoptera. *Can. Ent.* **52**: 96.
- 1920b. Description of new genera and species of Hawaiian Encyrtidae (Hym.). *Proc. Hawaii. ent. Soc.* **4**: 409–437.
- 1922. Notes on the identity and habits of *Blepyrus insularis* Cameron (Hymenoptera, Chalcidoidea). *Proc. Hawaii. ent. Soc.* **5**: 167–173.
- 1923. Descriptions of two new species of Encyrtidae from Mexico reared from mealy-bugs (Hym., Chalcidoidea). *Proc. Hawaii. ent. Soc.* **5**: 323–333.
- 1924. Descriptions of new chalcid-flies from Hawaii and Mexico (Hymenoptera). *Proc. Hawaii. ent. Soc.* **5**: 395–417.
- 1925. Descriptions of new chalcid-flies from Panama and Hawaii (Hymenoptera). *Proc. Hawaii. ent. Soc.* **6**: 173–192.
- 1926. Some new encyrtid flies. *Proc. U.S. natn. Mus.* **69** (3): 1–34, 2 pls.
- 1929. Three new species of the hymenopterous family Encyrtidae from New South Wales. *Univ. Calif. Publs Ent.* **5**: 5–18.
- 1932. Three new parasitic Hymenoptera from the Indo-Malayan Region. *Proc. Hawaii. ent. Soc.* **8**: 153–162.
- Trjapitzin, V. A.** 1963. On the systematic position of *Coccidencyrtus ambiguus* (Nees) (Hymenoptera, Encyrtidae). [In Russian.] *Ent. Obozr.* **42**: 884–888. [English translation: *Ent. Rev., Wash.* **42**: 479–481.]
- 1968. A review of the encyrtids (Hymenoptera, Encyrtidae) of the Caucasus. *Trudy vses. ént. Obshch.* **52**: 43–125.
- 1971a. *Parablastothrix plugarui* sp. n. (Hymenoptera: Encyrtidae) parasite of the mining moth *Bucculatrix ulmella* Z. in Moldavia. [In Russian.] *Entom. Moldavii* **1971**: 33–37.
- 1971b. Review of the genera of Palaearctic encyrtids (Hymenoptera, Encyrtidae). [In Russian.] *Trudy vses. ent. Obshch.* **54**: 68–155.
- 1971c. A new species of the genus *Ameromyzobia* (Hymenoptera, Encyrtidae) from the island of Cuba. [In Russian with English summary.] *Zool. Zh.* **50**: 289–291.
- 1971d. A Nearctic representative of the genus *Avetianella* Trjapitzin, 1968 (Hymenoptera, Encyrtidae). [In Russian.] *Ent. Obozr.* **50**: 890–892. [English translation: *Ent. Rev., Wash.* **50**: 507–508.]
- 1971e. New species of parasitic Hymenoptera of *Leptanusia* De Santis 1963 (Hymenoptera, Encyrtidae) genus. [In Russian.] *Izv. Akad. Nauk turkmen. SSR. (Biol. Ser.)* **1971**: 86–89.
- 1973a. The classification of parasitic Hymenoptera of the family Encyrtidae (Hymenoptera, Chalcidoidea). Part I. Survey of the systems of classification. The subfamily Tetracneminae Howard, 1892. [In Russian.] *Ent. Obozr.* **52**: 163–175. [English translation: *Ent. Rev., Wash.* **52**: 118–125.]

- 1973b. Classification of the parasitic Hymenoptera of the family Encyrtidae (Chalcidoidea). Part II. Subfamily Encyrtinae Walker, 1837. [In Russian.] *Ent. Obozr.* **52**: 416–429. [English translation: *Ent. Rev., Wash.* **52**: 287–295.]
- 1977. New genera and species of parasitic Hymenoptera of the family Encyrtidae (Hymenoptera: Chalcidoidea). *Folia ent. hung.* **30**: 153–166.
- Trjapitzin, V. A. & Gordh, G. 1978a. Review of genera of Nearctic Encyrtidae (Hymenoptera, Chalcidoidea). [In Russian.] *Ent. Obozr.* **57**: 364–385. [English translation: *Ent. Rev., Wash.* **57**: 257–270.]
- 1978b. Review of genera of Nearctic Encyrtidae (Hymenoptera, Chalcidoidea). II. [In Russian.] *Ent. Obozr.* **57**: 636–652.
- Viggiani, G. 1966. Ricerche sugli Hymenoptera Chalcidoidea. VI. Generi e specie nuovi per l'entomofauna italiana (Encyrtidae, Aphelinidae, Mymarommatidae). *Boll. Lab. Ent. agr. Filippo Silvestri* **24**: 84–105.
- Walker, F. 1837. Monographia Chalciditum. *Ent. Mag.* **4**: 349–364, 439–461.
- 1839. *Monographia Chalciditum*. 2, 100 pp. London.
- 1846. Characters of some undescribed species of Chalcidites. *Ann. Mag. nat. Hist.* (1) **17**: 108–115, 177–185, 270–272.
- 1848. *List of the specimens of Hymenopterous insects in the collection of the British Museum*, Part 2, Chalcidites, additional species. iv, 237 pp. London.
- Waterston, J. 1928. A new encyrtid (Hym., Chalcid.) bred from *Clastoptera* (Hom., Cercop.). *Bull. ent. Res.* **19**: 249–251.
- Westwood, J. O. 1832. Descriptions of several new British forms amongst the parasitic hymenopterous insects. *Phil. Mag.* (3) **1**: 127–129.
- 1833. Descriptions of several new British forms amongst the parasitic hymenopterous insects. *Phil. Mag.* (3) **3**: 342–344.
- 1837. Description of a new genus of British parasitic hymenopterous insects. *Ann. Mag. nat. Hist.* (N.S.) **1**: 257–259.
- 1838–1840. Synopsis of the genera of British insects. In: *An introduction to the modern classification of insects*. Vol. 2 (appendix) 158 pp. London.

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